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ABSTRACT

This guide presents the standard curriculum for technical institutes in Georgia. The curriculum addresses the minimum competencies for a printing/graphics technology program. It includes specializations in art and copy preparation, prepress/image assembly, and lithographic press operations. The guide contains four major sections. The General Information section contains an introduction giving an overview and defining the purpose and objectives; a program description, including admissions requirements, typical job titles, and an accreditation and certification statement; and curriculum model, including standard curriculum sequence and lists of courses. The next three sections describe the courses under the following categories: General Core Courses (English, general mathematics, interpersonal relations and professional development); Fundamental Technical Courses (introduction to computers, introduction to printing industry); and Specific Technical Courses of which there are 28, including art and copy preparation, type composition, reproduction photography, image assembly, halftone reproduction photography, basic multicolor assembly, film composition production techniques, process color assembly techniques, duplicator operations, large single-color sheet press operations, and press operations internship. Each course entry consists of the following: course overview (description, competency areas, prerequisites, credit hours, contact hours); course outline with student objectives and class and lab hours; and resource list. An equipment list is appended. (YLB)

GEORGIA DEPARTMENT OF TECHNICAL AND ADULT EDUCATION

PRINTING/GRAPHIC ARTS TECHNOLOGY PROGRAM GUIDE

PRINTING/GRAPHICS TECHNOLOGY PROGRAM GUIDE

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PRINTING/GRAPHICS TECHNOLOGY PROGRAM GUIDE

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HOW TO USE THIS MANUAL

Summary

This manual is divided into:

Tabs - major divisions, physically separated by numbered tab dividers

Sections - divisions within a tab

Subjects - divisions within a section

Numbering System

Each document (Subject) has a unique 6-digit number. This number is divided into 3 sets of 2 digits which are separated by dashes.

Example: 04 - 02 - 03
TAB SECTION SUBJECT

Locating a Document

Document numbers appear on the upper right hand corner of each page (see top of this page). To locate a subject:

1. Refer to the Table of Contents.
2. Note the document number for the subject.

   Example: 04-02-03

3. Turn to the tab divider marked 04 and within this tab find Section 02 and Subject 03.

Table of Contents

The table of contents (00-00-01) is intended to give a cover-to-cover overview of the manual contents and organization. It lists contents of a Tab to the Section and Subject level.

Amendments

Registered manual holders are instructed to keep their manuals up-to-date.

Manuals Document Transmittal	All new or revised documents are sent to the registered holder of the manual and are recorded on a Manuals Document Transmittal Form. Transmittals are numbered consecutively, and instructions for use are printed on the form.
Amendment Record	The registered holder of the manual records the receipt of all manual document transmittals on the Amendment Record. This record and instructions are found on the reverse side of the manual title page.

GENERAL INFORMATION

Introduction

Overview

Printing/Graphics Technology is a program of study which is consistent with the philosophy and purpose of the institution. The program provides academic foundations in communications, mathematics, and human relations, as well as technical fundamentals. Program graduates are well grounded in the fundamentals of printing/graphics technology and are prepared for employment and subsequent upward mobility.

The Printing/Graphics Technology program provides the student with necessary knowledge and skills to adapt to a variety of positions in the rapidly changing printing/graphics technology field. Skill development in computer technology plays a vital role in the Printing/Graphics Technology program. Important attributes for success of program graduates are critical thinking, problem solving, human relations skills, and the ability to apply technology to work requirements.

The program structure acknowledges individual differences and provides opportunities for students to seek fulfillment of their respective educational goals. The program does not discriminate on the basis of race, color, national origin, religion, sex, handicapping condition, academic or economic disadvantage.

To assist each student to attain his or her respective potential within the program, both the instructor and the student incur an obligation in the learning process. The instructor is a manager of instructional resources and organizes instruction in a manner which promotes learning. The student assumes responsibility for learning by actively participating in the learning process.

This is a dynamic field which requires ongoing attention to current curriculum and up-to-date instructional equipment, materials, and processes. The Printing/Graphics Technology program must promote the concept of change as the profession evolves. The need for nurturing the spirit of involvement and lifelong learning is paramount in the printing/graphics technology field.

GENERAL INFORMATION

Introduction

Standard Curriculum

The Printing/Graphics Technology program guide presents the standard Printing/Graphics Technology curriculum for technical institutes in Georgia. This curriculum addresses the minimum competencies for a Printing/Graphics Technology program. The competency areas included in a local Printing/Graphics Technology program may exceed what is contained in this program guide, but it must encompass the minimum competencies contained herein.

As changes occur in Printing/Graphics Technology, this program guide will be revised to reflect those changes. Proposed changes are first evaluated and approved by the local program advisory committee and then forwarded to the State Technical Committee for approval and inclusion in the state standard program guide.

This program guide is designed to relate to a comprehensive coverage of the printing/graphics technology industry. It includes specializations in art and copy preparation, prepress/image assembly, and lithographic press operations.

GENERAL INFORMATION

Introduction

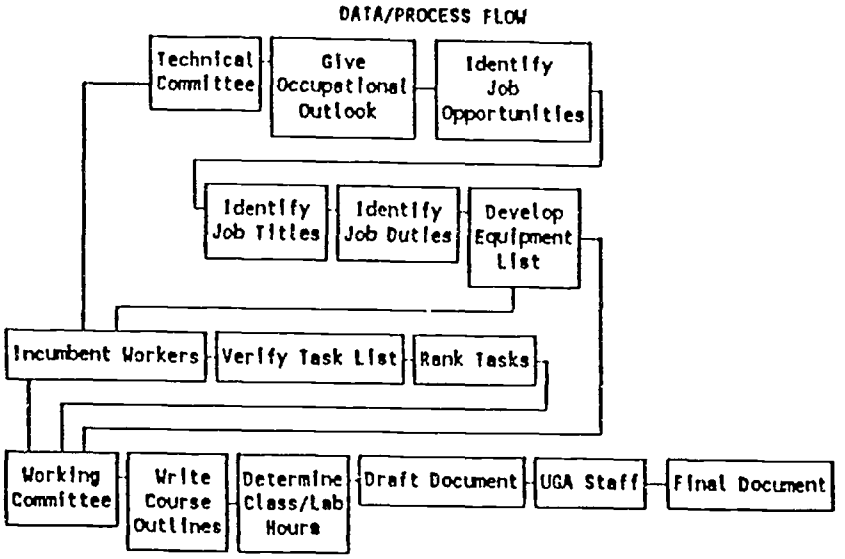
Developmental Process

The development of the Printing/Graphics Technology program guide was based on the premise that the people in the industry can best determine program needs. With this in mind, representatives from businesses which would employ program graduates were asked to serve on a state technical committee to help identify the technical content and to provide overall guidance to ensure that the resulting program would produce graduates qualified for entry level technical positions in the industry.

Representatives from the various occupational areas recommended by the State Technical Committee verified the task list compiled from extensive research. These were workers actually performing the duties and tasks being verified.

Technical institutes which would implement the curriculum were also included in the developmental effort. Representatives from the technical institutes provided the expertise in teaching methodology unique to each discipline and developed the courses contained in this program guide.

The University of Georgia coordinated and directed the development of the curriculum and produced the final program guide. The role of each group in the developmental process is shown in the following diagram.



GENERAL INFORMATION

Introduction

Purpose and Objectives

Purpose

The purpose of the Printing/Graphics Technology program is to provide educational opportunities to individuals that will enable them to obtain the knowledge, skills, and attitudes necessary to succeed in the field of printing/graphics technology.

The Printing/Graphics Technology program provides educational opportunities regardless of race, color, national origin, religion, sex, age, handicapping condition, academic disadvantage, or economic disadvantage.

The Printing/Graphics Technology program is intended to produce graduates who are prepared for employment as typesetter/paste-up artists, film assembler/camera operators, or lithographic press operators. Program graduates exhibit industry entry level competence in the general areas of communications, math, and interpersonal relations.

Graduates who specialize in art and copy preparation are competent in the areas of type composition and preparation of art work to be assembled for press reproduction. Graduates who specialize in prepress/image assembly are competent in the areas of reproduction photography and film composition. Graduates who specialize in lithographic press operations are competent in the operation of a duplicator press and in the use of the large single-color sheet press.

Objectives

The objectives of the Printing/Graphics Technology program are to:

1. Provide current curriculum, instructional materials, and equipment (in accordance with available funding) which teach knowledge, skills, and attitudes appropriate to industry needs.

2. Provide educational facilities which foster learning and provide safe, healthy environments available and accessible to all students who can benefit from the program.

3. Provide academic instruction which supports effective learning within the program and which enhances professional performance on the job.

4. Provide employability skills which foster work attitudes and work habits that will enable graduates of the program to perform as good employees.

5. Nurture the desire for learning so that graduates will pursue their own continuing education as a lifelong endeavor.

6. Provide an educational atmosphere which promotes a positive self-image and a sense of personal well-being.

7. Provide education that fosters development of good safety habits.

8. Provide admission, educational, and placement services without regard to race, color, national origin, religion, sex, age, or handicapping condition.

9. Provide information to the public regarding the program that will facilitate recruitment and enrollment of students.

10. Promote good public relations via contacts and regular communications with business, industry, and the public sector.

11. Promote faculty and student rapport and communications to enhance student success in the program.

GENERAL INFORMATION

Program Description

Program Defined

The Printing/Graphics Technology program prepares students for employment in a variety of positions in today's modern printing industry. The Printing/Graphics Technology program provides learning opportunities which introduce, develop, and reinforce knowledge, skills, and attitudes required for getting a job, keeping it, and being promoted. Additionally, the program provides opportunities to upgrade present knowledge and skills or to retrain in the area of Printing/Graphics Technology. Graduates of the program receive a Printing/Graphics Technology diploma with a specialization in one of the following areas: art and copy preparation, which prepares you to be a typesetter or paste-up artist; prepress/image assembly, which enables you to be a film assembler or camera operator; or lithographic press operations, which prepares you to operate a lithographic press.

GENERAL INFORMATION

Program Description

Admissions

Admissions Requirements

Admission of new students to the Printing/Graphics Technology program is contingent upon their meeting all of the following requirements:

a) attainment of 16 or more years of age;
b) documentation of high school graduation or satisfaction of High School Equivalency Certificate requirements;
c) achievement of the 8th grade level in reading and English, and the 8th grade level in math as shown on a statistically validated test; and
d) completion of application and related procedures.

Admission of transfer students is contingent upon their meeting the following:

a) regular admission and good standing at a regionally accredited diploma or degree granting institution; and
b) proper completion of application and related procedures.

Provisional Admission

A new student who does not meet the regular admission requirements of the program may be admitted on a provisional basis. The requirements for provisional admission are:

a) attainment of 16 or more years of age;
b) achievement of the 7th grade level in reading and English, and the 7th grade level in math as shown on a statistically validated test or recommendation by program faculty and designated admissions personnel on the basis of interview and assessment of student potential; and
c) completion of application and related procedures.

GENERAL INFORMATION

Program Description

Typical Job Titles

Job Titles

The Printing/Graphics Technology program is assigned a (PGM) CIP code of (PGM) 48.0201 and is consistent with all other programs throughout the state which have the same CIP code.

The Printing/Graphics Technology program specializations are assigned the following (SPC) CIP code specialization numbers: art and copy preparation, (SPC) 48.0205; prepress/image assembly, (SPC) 48.0206; and lithographic press operations, (SPC) 48.0208. The related D.O.T job titles include the following:

Photocomposing-machine operator	650.582-018
Printer	651.380-010
Offset-press operator	651.482-010
Offset-press operator apprentice	651.482-014
Assistant-press operator	651.585-010
Offset-duplicating-machine operator	651.682-014
Folding-machine operator	653.382-010
Collating-machine operator	653.585-010
Collator	653.687-010

GENERAL INFORMATION

Program Description

Accreditation and Certification

The Printing/Graphics Technology program must conform to the institutional accreditation requirements of the Southern Association of Colleges and Schools by meeting Commission on Colleges (COC) or Commission on Occupational Education Institutions (COEI) accreditation requirements and must not conflict with the accreditation criteria established by COC and COEI.

Currently there are no national or state requirements for program accreditation or certification established. There are no individual certification or licensure requirements which job applicants must meet prior to entry into occupations in the printing/graphics technology field. However, program certification criteria are in the planning and development stage through the Printing Industry Association of Georgia (PIAG) and certification is projected to be available in six months to one year.

GENERAL INFORMATION

Curriculum Model

Standard Curriculum

The standard curriculum for the Printing/Graphics Technology program is set up on the quarter system. A suggested sequence for each specialization in the program is given below. Technical institutes may implement the Printing/Graphics Technology program using a sequence listed below or a locally developed sequence designed to reflect the course prerequisites and/or corequisites.

Course	Class Hours	Lab Hours	Weekly Contact Hours	Credits
LITHOGRAPHIC PRESS OPERATIONS SPECIALIZATION				
FIRST QUARTER				
ENG 101 English	5	0	5	5
CIS 102 Introduction to Computers	3	4	7	5
PGT 101 Introduction to the Printing Industry	6	4	10	8
	14	8	22	18
SECOND QUARTER				
PGT 120 Duplicator Operations I	2	7	9	4
PGT 121 Duplicator Operations II	1	5	6	3
PSY 100 Interpersonal Relations and Professional Development	3	0	3	3
MAT 101 General Mathematics	5	0	5	5
	11	12	23	15

Course	Class Hours	Lab Hours	Weekly Contact Hours	Credits
THIRD QUARTER				
PGT 122 Advanced Duplicator Operations I	2	3	5	3
PGT 123 Advanced Duplicator Operations II	1	9	10	4
PGT 124 Large Single-Color Sheet Press Operations I	2	3	5	3
XXX xxx Technical or Technically Related Electives	-	-	-	3
	5	15	20	13
FOURTH QUARTER				
PGT 125 Large Single-Color Sheet Press Operations II	3	7	10	6
XXX xxx Technical or Technically Related Electives	-	-	-	8
	3	7	10	14
FIFTH QUARTER				
PGT 126 Large Single-Color Sheet Press Operations III	1	9	10	5
PGT 127 Large Single-Color Sheet Press Operations IV	1	9	10	5
	2	18	20	10

Course	Class Hours	Lab Hours	Weekly Contact Hours	Credits
SIXTH QUARTER				
PGT 128 Press Operations Practicum/ Internship I	0	20	20	6
	0	20	20	6
SEVENTH QUARTER				
PGT 129 Press Operations Internship II	0	20	20	6
	0	20	20	6

Course	Class Hours	Lab Hours	Weekly Contact Hours	Credits
PREPRESS IMAGE ASSEMBLY SPECIALIZATION				
FIRST QUARTER				
CIS 102 Introduction to Computers	3	4	7	5
ENG 101 English	5	0	5	5
MAT 101 General Mathematics	5	0	5	5
PGT 101 Introduction to the Printing Industry	6	4	10	8
	19	8	27	23
SECOND QUARTER				
PGT 109 Reproduction Photography	2	8	10	5
PGT 110 Image Assembly	1	4	5	2
PGT 111 Image Assembly/Platemaking	1	9	10	4
PSY 100 Interpersonal Relations and Professional Development	3	0	3	3
	7	21	28	14
THIRD QUARTER				
PGT 112 Halftone Reproduction Photography I	1	4	5	2
PGT 113 Halftone Reproduction Photography II	1	9	10	4
PGT 114 Basic Multicolor Assembly	2	8	10	5
XXX xxx Technical or Technically Related Electives	-	-	-	3
	4	21	25	14

Course	Class Hours	Lab Hours	Weekly Contact Hours	Credits
FOURTH QUARTER				
PGT 115 Film Composition Production Techniques I	1	9	10	4
PGT 116 Film Composition Production Techniques II	1	9	10	4
XXX xxx Technical or Technically Related Electives	-	-	-	3
	2	18	20	11
FIFTH QUARTER				
PGT 117 Process Color Assembly Techniques	1	9	10	4
PGT 118 Process Color Production Techniques	1	9	10	4
XXX xxx Technical or Technically Related Electives	-	-	-	3
	2	18	20	11
SIXTH QUARTER				
PGT 119 Prepress Technology Practicum/ Internship	1	24	25	9
	1	24	25	9

Course	Class Hours	Lab Hours	Weekly Contact Hours	Credits
ART AND COPY PREPARATION SPECIALIZATION				
FIRST QUARTER				
PGT 101 Introduction to the Printing Industry	6	4	10	8
BUS 101 Keyboarding/Typewriting	1	9	10	5
CIS 102 Introduction to Computers	3	4	7	5
XXX xxx Technical or Technically Related Electives	-	-	-	2
	10	17	27	20
SECOND QUARTER				
ENG 101 English	5	0	5	5
MAT 101 General Mathematics	5	0	5	5
PGT 102 Art and Copy Preparation	6	4	10	8
PGT 103 Introduction to Type Composition	5	5	10	7
	21	9	30	25
THIRD QUARTER				
PGT 104 Desktop Publishing for Graphic Technology	2	3	5	3
PGT 105 Advanced Type Composition	3	4	7	4
PSY 100 Interpersonal Relations and Professional Development	3	0	3	3
XXX xxx Technical or Technically Related Electives	-	-	-	6
	8	7	15	16

Course	Class Hours	Lab Hours	Weekly Contact Hours	Credits
FOURTH QUARTER				
PGT 106 Art and Copy Preparation Practicum/Internship	1	30	31	11
	1	30	31	11
FIFTH QUARTER				
PGT 107 Art and Copy Preparation Internship	0	30	30	10
	0	30	30	10

GENERAL INFORMATION

Curriculum Model

General Core Courses

The general core courses provide students with a foundation in the basic skills which enable them to express themselves more clearly, both orally and in writing, and to perform the mathematical functions required in this occupation. The general core courses for the Printing/Graphics Technology program are listed below.

ENG 101	English	5 Credits
MAT 101	General Mathematics	5 Credits
PSY 100	Interpersonal Relations and Professional Development	3 Credits

GENERAL INFORMATION

Curriculum Model

Fundamental Technical Courses

The fundamental technical courses provide students with a foundation in the area of printing/graphics technology which is needed to progress to the more highly specialized courses in printing/graphics technology. The fundamental technical courses are listed below.

CIS	102	Introduction to Computers	5 Credits
PGT	101	Introduction to the Printing Industry	8 Credits

GENERAL INFORMATION

Curriculum Model

Specific Technical Courses

The specific technical courses build upon the technical core courses to provide students with the basic knowledge and skill required to work as a typesetter/pasteup artist, film assembler, or lithographic press operator. The specific technical courses offered in the Printing/Graphics Technology program are listed below.

BUS	101	Keyboarding/Typewriting	5 Credits
PGT	102	Art and Copy Preparation	8 Credits
PGT	103	Introduction to Type Composition	7 Credits
PGT	104	Desktop Publishing for Graphic Technology	3 Credits
PGT	105	Advanced Type Composition	4 Credits
PGT	106	Art and Copy Preparation Practicum/Internship	11 Credits
PGT	107	Art and Copy Preparation Internship	10 Credits
PGT	109	Reproduction Photography	5 Credits
PGT	110	Image Assembly	2 Credits
PGT	111	Image Assembly/Platemaking	4 Credits
PGT	112	Halftone Reproduction Photography I	2 Credits
PGT	113	Halftone Reproduction Photography II	4 Credits
PGT	114	Basic Multicolor Assembly	5 Credits
PGT	115	Film Composition Production Techniques I	4 Credits
PGT	116	Film Compostion Production Techniques II	4 Credits

PGT	117	Process Color Assembly Techniques	4 Credits
PGT	118	Process Color Production Techniques	4 Credits
PGT	119	Prepress Technology Practicum/Internship	9 Credits
PGT	120	Duplicator Operations I	4 Credits
PGT	121	Duplicator Operations II	3 Credits
PGT	122	Advanced Duplicator Operations I	3 Credits
PGT	123	Advanced Duplicator Operations II	4 Credits
PGT	124	Large Single-Color Sheet Press Operations I	3 Credits
PGT	125	Large Single-Color Sheet Press Operations II	6 Credits
PGT	126	Large Single-Color Sheet Press Operations III	5 Credits
PGT	127	Large Single-Color Sheet Press Operations IV	5 Credits
PGT	128	Press Operations Practicum/Internship I	6 Credits
PGT	129	Press Operations Internship II	6 Credits
		Art and Copy Preparation Technical or Technically Related Electives	8 Credits
		Prepress Image Assembly Technical or Technically Related Electives	9 Credits
		Lithographic Press Operations Technical or Technically Related Electives	11 Credits

GENERAL INFORMATION

Curriculum Model

Electives

Elective courses are provided to allow for the different levels of prior knowledge and skills brought to the classroom by students with diverse backgrounds, educational attainment, and specialized interests.

Decisions regarding the selection and appropriateness of any elective are made by the student after consultation with the instructor. Courses from other departments may be taken as electives when considered appropriate for a student's academic circumstances and career goals.

Document Number:
01-03-06

GENERAL INFORMATION

Curriculum Model

Areas of Specialization

The industry technical committee identified three areas of specialization for which training is needed. In this section the courses required to gain skills are identified for each area of specialization.

Each of three specialization areas includes common general core and fundamental technical courses. In addition to completion of general core and fundamental technical courses a student may choose one of the following specialization areas for diploma completion.

		Credits
Essential Lithographic Press Operations Specialization Courses		56
PGT	120 Duplicator Operations I	4
PGT	121 Duplicator Operations II	3
PGT	122 Advanced Duplicator Operations I	3
PGT	123 Advanced Duplicator Operations II	4
PGT	124 Large Single Color Sheet Press Operations I	3
PGT	125 Large Single Color Sheet Press Operations II	6
PGT	126 Large Single Color Sheet Press Operations III	5
PGT	127 Large Single Color Sheet Press Operations IV	5
PGT	128 Press Operations Practicum/Internship I	6
PGT	129 Press Operations Internship II	6
XXX	xxx Technical or Technically Related Electives	11

OR

Essential Prepress Image Assembly Specialization Courses		56
PGT	109 Reproduction Photography	5
PGT	110 Image Assembly	2
PGT	111 Image Assembly/Platemaking	4
PGT	112 Halftone Reproduction Photography I	2
PGT	113 Halftone Reproduction Photography II	4

PGT	114	Basic Multicolor Assembly	5
PGT	115	Film Composition Production Techniques I	4
PGT	116	Film Composition Production Techniques II	4
PGT	117	Process Color Assembly Techniques	4
PGT	118	Process Color Production Techniques	4
PGT	119	Prepress Technology Practicum/Internship	9
XXX	xxx	Technical or Technically Related Electives	9

OR

			Credits
Essential Art and Copy Preparation Specialization Courses			56
BUS	101	Keyboarding/Typewriting	5
PGT	102	Art and Copy Preparation	8
PGT	103	Introduction to Type Composition	7
PGT	104	Desktop Publishing for Graphic Technology	3
PGT	105	Advanced Type Composition	4
PGT	106	Art and Copy Preparation Practicum/ Internship	11
PGT	107	Art and Copy Preparation Internship	10
XXX	xxx	Technical or Technically Related Electives	8

GENERAL CORE

ENG 101 - English

Course Overview

Course Description

Emphasizes the development and improvement of written and oral communication abilities. Topics include: analysis of writing techniques used in selected readings, writing practice, editing and proofreading, research skills, and oral presentation skills. Homework assignments reinforce classroom learning.

Competency Areas

Analysis of Writing Techniques
Used in Selected Readings
Writing Practice
Editing and Proofreading
Research Skills
Oral Presentation Skills

Prerequisite

Program admission level English and reading competency

Credit Hours

5

Contact Hours Per Week

Class - 5

Lab - 0

GENERAL CORE

ENG 101 - English

Course Outline

Recommended Outline	After completing this section, the student will:	Hours Class	Lab
ANALYSIS OF WRITING TECHNIQUES USED IN SELECTED READINGS		**10**	**0**
Review and analysis of various writing techniques	Read and analyze writing to identify subject and focus. Read and analyze writing to identify supporting information. Read and analyze writing to identify patterns of development, such as time, space, climax, example, process, instructions, definition, comparison/ contrast, cause and effect, classification, and problem-solving.		
WRITING PRACTICE		**20**	**0**
Review of grammar fundamentals	Produce logically organized, grammatically acceptable writing.		
Review of composition fundamentals	Compose a variety of paragraphs, reports, memorandums, and business letters. Demonstrate listening skills by following directions for writing assignments.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
EDITING AND PROOFREADING		**10**	**0**
Review of editing fundamentals	Revise to improve ideas, style, organization, and format, preferably with word processing.		
	Edit to improve grammar, mechanics, and spelling.		
RESEARCH SKILLS		**5**	**0**
Resource materials location and utilization	Utilize library resources to enhance writing.		
ORAL PRESENTATION SKILLS		**5**	**0**
Types of oral presentation participation	Participate in class discussion, small group discussion, and/or individual presentations.		
Role of the listener	Participate as an active listener.		

GENERAL CORE

ENG 101 - English

Resources

Printed References

Lewis, S. D., Smith, H., Baker, F., Ellegood, G., Kopay, C., & Tanzer, W. (1988). *Writing skills for technical students* (2nd ed.). Englewood Cliffs, NJ: Prentice Hall.

VanAlstyne, J. S. (1986). *Professional and technical writing strategies.* Englewood Cliffs, NJ: Prentice Hall.

GENERAL CORE

MAT 101 - General Mathematics

Course Overview

Course Description

Emphasizes mathematical skills that can be applied to the solution of occupational/technical problems. Topics include: properties of numbers, fractions, decimals, percents, ratio/proportion, measurements and conversions, exponents, and geometric and technical formulas. Class includes lectures, applications, and homework to reinforce learning.

Competency Areas

Properties of Numbers
Fractions
Decimals
Percents
Ratio/Proportion
Measurement/Conversions
Exponents and Radicals
Geometric and Technical Formulas

Prerequisite

Program admission level math competency

Credit Hours

5

Contact Hours Per Week

Lab - 0

Class - 5

GENERAL CORE

MAT 101 - General Mathematics

Course Outline

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
PROPERTIES OF NUMBERS		**5**	**0**
Whole numbers	Identify prime and composite numbers. Solve whole number problems using mathematical operations of addition, subtraction, multiplication, division, and powers.		
FRACTIONS		**10**	**0**
Definition of fractions	Define a fraction. Identify proper, improper, and mixed fractions.		
Equivalent fractions	Solve problems relating to equivalent fractions.		
Mathematical operations using fractions	Solve problems requiring multiplication, division, addition, and subtraction of fractions.		
DECIMALS		**5**	**0**
Definition of decimals and place value	Perform mathematical operations using decimals.		

Recommended Outline	After completing this section, the student will:	Hours Class	Lab
Basic operations of mathematics with decimals	Solve problems using decimals, scientific notation, and powers of ten.		
Conversion of fractions to decimals and decimals to fractions			
Power of ten			
PERCENTS		**5**	**0**
Definition of percents	Work problems using percents dealing with mixtures and interests.		
Conversion between fractions and decimals			
Base-rate-part problems			
Mixture and interest			
RATIO/PROPORTION		**10**	**0**
Definition of rate, ratio, and proportions	Construct and solve problems involving ratios and proportions.		
Variation: direct and inverse	Identify, setup, and solve proportionality problems.		
Measurement and conversion	Solve problems and applications in measurement and conversions.		
Definition of basic units of measurement	Use dimensioning.		
	Convert between measurement systems.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
EXPONENTS AND RADICALS		**5**	**0**
Laws of exponents	Apply laws of exponents to simplify complex exponents expressions.		
Radicals	Find roots of numbers.		
GEOMETRIC AND TECHNICAL FORMULAS		**10**	**0**
Types of formulas	Identify basic two and three dimensional figures.		
	Find the areas of rectangular and circular figures.		
	Solve for volumes of cubes, rectangular solids, and right circular cylinders.		
	Identify, measure, and solve problems using angles.		
	Solve and manipulate basic algebraic and trigonometric formulas.		

GENERAL CORE

MAT 101 - General Mathematics

Resources

Printed References

Harter, J. H., & Beitzel, W. D. (1988). *Mathematics applied to electronics* (3rd ed.). Englewood Cliffs, NJ: Prentice Hall.

Heywood, A. (1982). *Arithmetic: A programmed worktext.* Monterey, CA: Brooks/Cole.

Johnston, C. L., Willis, A. T., & Hughes, G. M. (1984). *Essential arithmetic* (4th ed.). Belmont CA: Wadsworth.

Keedy, M. L., & Bittinger, M. L. (1983). *Introductory algebra* (4th ed.). Perdue, IN: Addison-Wesley.

Keedy, M. L., & Bittinger, M. L. (1985). *Essential mathematics* (4th ed.). Perdue, IN: Addison-Wesley.

Lewis, H. (1986). *Technical mathematics.* Albany, NY: Delmar.

Palmer, C. L., & Rachek, L. A. (1986). *Practical mathematics* (7th ed.). Minneapolis: McGraw-Hill.

Proga, R. (1987). *Basic mathematics* (2nd ed.). Boston: Prindle, Weber & Schmidt.

Washington, A. J., & Triola, M. F. (1984). *Technical mathematics* (3rd ed.). Poughkeepsie, NY: Benjamin/Cummings.

GENERAL CORE

PSY 100 - Interpersonal Relations and Professional Development

Course Overview

Course Description

Provides a study of human relations and professional development in today's rapidly changing world that prepares students for living and working in a complex society. Topics include: personal skills required for understanding the self and others; projecting a professional image; job acquisition skills such as conducting a job search, interviewing techniques, job application, and resume preparation; desirable job performance skills; and desirable attitudes necessary for job retention and advancement.

Competency Areas

Human Relations Skills
Job Acquisition Skills
Job Retention Skills
Job Advancement Skills
Professional Image Skills

Prerequisite

Provisional admission

Credit Hours

3

Contact Hours Per Week

Class - 3

Lab - 0

GENERAL CORE

PSY 100 - Interpersonal Relations and Professional Development

Course Outline

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
HUMAN RELATIONS SKILLS		**6**	**0**
Goal setting	Develop and set personal goals.		
Stress management	Diagnose and respond to own stress level.		
Behavior problems	Identify strategies to handle difficult behaviors effectively.		
Personal introductions	Make proper introductions.		
Problem solving/decision making	Identify strategies to solve problems/make decisions.		
JOB ACQUISITION SKILLS		**15**	**0**
Job search	Identify strategies to conduct a job search.		
Career goals	Develop and set career goals.		
Employment documents	Prepare letter of application.		
	Prepare resume/applications.		
	Prepare follow-up letters.		
Interviewing	Demonstrate interviewing techniques.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
JOB RETENTION SKILLS		**3**	**0**
Office relationships	Identify techniques used to work effectively with coworkers.		
Time management	Develop time management strategies.		
JOB ADVANCEMENT SKILLS		**3**	**0**
Performance appraisal	Demonstrate ability to accept counseling positively.		
	Demonstrate ability to negotiate promotion/salary increase.		
Supervisory chain	Explain chain of responsibility.		
PROFESSIONAL IMAGE SKILLS		**3**	**0**
Image	Project professional image.		
Attitude	Project professional attitude.		

GENERAL CORE

PSY 100 - Interpersonal Relations and Professional Development

Resources

Printed References

DuBrin, A. G. (1988). *Human relations-A job oriented approach* (4th ed.). Englewood Cliffs, NJ: Prentice Hall.

Milton, C. R. (1981). *Human behavior in organizations*. Englewood Cliffs, NJ: Prentice Hall.

Reynolds, C. *Dimensions in professional development* (3rd ed.). Cincinnati, OH: South-Western.

Rogers, C. R. (1981). *Human behavior in organizations*. Cincinnati, OH: South-Western.

Wilkes, M., & Crosswait, C. B. *Professional development--The dynamics of success* (3rd ed.). Atlanta: Harcourt Brace & Jovanovich.

Williams, C., Jr. (1982). *Human behavior in organizations*. Cincinnati, OH: South-Western.

FUNDAMENTAL TECHNICAL

CIS 102 - Introduction To Computers

Course Overview

Course Description

Provides an overview of computers and information processing. Topics include: historical perspective, terminology, data representation, computer number systems, processing capabilities, hardware, software, communications, program development, systems development, and software applications.

Competency Areas

Computer Terminology
Computer Number Systems
Fundamentals of Information Processing
Data Representation
Fundamentals of Hardware Operation
Data Storage Concepts
Program Development Methodology
Structured Programming Concepts
Fundamentals of Communications and Networking
Software Applications

Prerequisite

Provisional admission

Credit Hours

5

Contact Hours Per Week

D.Lab - 4

Class - 3

FUNDAMENTAL TECHNICAL

CIS 102 - Introduction To Computers

Course Outline

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
COMPUTER TERMINOLOGY		**5**	**0**
Computers and their uses	Describe the history of data processing and computers.		
	Identify the many uses of computers.		
	Identify employment opportunities.		
Basic concepts	Describe the three basic elements of data processing(i.e., input, processing, output).		
	Describe the functional units of a computer system (i.e., the processor unit, secondary storage devices, input devices, and output devices).		
COMPUTER NUMBER SYSTEMS		**2**	**0**
Principles of number systems	Convert numbers from one base to another (i.e., binary, decimal, and hexadecimal).		
	Explain how binary and hexadecimal numbering systems are used in regard to computers.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
FUNDAMENTALS OF INFORMATION PROCESSING		**2**	**0**
Information cycle	Explain information cycle (i.e., input, processing, output).		
Information sources	Identify information sources (i.e., documents, files, database).		
Information systems	Describe information systems (i.e., EDP, DBMS, MIS, Decision Support Systems, remote databases, distributed databases).		
Information terms	Identify information terms (i.e., data, information, field, record, file, sequential files, direct files, indexed sequential files).		
DATA REPRESENTATION		**2**	**0**
Internal data representation	Discuss binary components and binary notation.		
Coding systems	Interpret EBCDIC and ASCII.		
FUNDAMENTALS OF HARDWARE OPERATION		**3**	**0**
Central processing unit	Describe each part of the CPU (i.e., ALU, Control Section).		
Primary storage	Discuss primary storage (i.e., RAM memory).		
Peripheral devices	Identify peripheral devices.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
DATA STORAGE CONCEPTS		**2**	**0**
Storage devices	Identify storage devices.		
Storage media	Describe storage media.		
Storage methods	Explain file organization.		
PROGRAM DEVELOPMENT METHODOLOGY		**6**	**5**
Problem definition	Define the problem and the solution.		
Solution design	Analyze logical procedures.		
Coding, testing, and debugging	Identify coding, testing, and debugging techniques.		
Implementation and maintenance	Identify implementation and maintenance procedures.		
STRUCTURED PROGRAMMING CONCEPTS		**2**	**0**
Characteristics of programs	Identify structured programming techniques.		
Advantages of structured programs	Define structured programming advantages.		
Programming languages	Discuss low-level and high-level programming languages.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
FUNDAMENTALS OF COMMUNICATIONS AND NETWORKING		**2**	**0**
Basic data communications	Define basic data communications concepts (i.e., analog/digital, asynchronous/synchronous).		
Data communications services	Discuss common carriers (i.e., AT & T, GTE Sprint, MCI) and value-added networks (i.e., Telent, Tymmet).		
Networks	Identify network configurations.		
SOFTWARE APPLICATIONS		**4**	**35**
Applications and system software	Describe the differences in application and system software.		
Spreadsheet software	Construct a spreadsheet.		
Word processing software	Utilize a word processor.		
Database software	Use a database management software package.		
Integrated software	Apply integrated software.		

FUNDAMENTAL TECHNICAL

CIS 102 - Introduction To Computers

Resources

Printed References

Adams, D. R., & Wagner, G. E. (1986). *Computers information systems: An introduction.* Cincinnati: South-Western.

Bohl, M. (1986). *Essentials of information processing.* Chicago: Science Research Associates.

Brightman, R. W., & Dimsdale, J. (1986). *Using computers in an information age.* Albany, NY: Delmar.

Floyd, N. A. (1987). *Essentials of data processing.* Englewood Cliffs, NJ: Prentice-Hall.

Long, L. (1988). *Introduction to computers and information processing.* Englewood Cliffs, NJ: South-Western.

Reiss, L., & Dolan, E. G. (1989). *Using computers and managing change.* Cincinnati: South-Western.

Syzmanski, R. et al (1988). *Computers and application software.* Columbus: Merrill.

FUNDAMENTAL TECHNICAL

PGT 101 - Introduction To The Printing Industry

Course Overview

Course Description

Introduces all major phases of the graphic arts industry and these basic and necessary skills specific to graphic arts activities in subsequent specialized courses. Topics include: industry overview, paste-up/layout composition, reproduction photography, image assembly, offset duplicator, bindery, measurement, safety and first aid, printers math, and job application skills.

Competency Areas

Industry Overview
Paste-up/Layout
Composition
Reproduction Photography
Image Assembly
Offset Duplicator
Bindery
Measurement
Safety and First Aid
Printers Math
Job Application Skills

Prerequisite

Provisional admission

Credit Hours

8

Contact Hours Per Week

D.Lab - 4

Class - 6

FUNDAMENTAL TECHNICAL

PGT 101 - Introduction To The Printing Industry

Course Outline

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
INDUSTRY OVERVIEW		**3**	**0**
Sizes and scope	Define the role of graphics in the free enterprise system.		
	Identify printing markets and types of printing businesses.		
	List printing's ranking among other industries.		
Printing services organization	Identify the major printing processes.		
	List the advantages of each major process.		
	List the disadvantages of each major process.		
	Identify the products produced by each major process.		
	List in order the business flow of printing from initial need to final product.		
	List in order the technical production flow from idea to finished product.		
Careers in printing	Identify major occupations in the graphic arts.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
	List the major responsibilities for each occupation.		
	Identify basic salary/wage expectation ranges for local area.		
PASTE-UP/LAYOUT		**2**	**3**
Tools and equipment	Identify basic equipment and hand tools for paste-up.		
Materials	Identify basic materials and supplies for paste-up.		
Paste-up procedures	Produce a simple paste-up using the correct procedures, equipment, tools, and materials.		
COMPOSITION		**2**	**2**
Tools and equipment	Identify basic equipment and hand tools for composition.		
Materials	Identify basic materials and supplies for composition.		
Composition procedures	Produce headline and body type using the correct procedures.		
	Properly handle, mix, store, and dispose of hazardous chemicals.		
	Record production time, materials consumption, and quantities on appropriate forms.		
	Read and interpret Material Safety Data Sheets and product labels.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
	Plan and organize work for optimum productivity.		
REPRODUCTION PHOTOGRAPHY		**4**	**6**
Tools and equipment	Identify basic darkroom equipment and hand tools.		
	Identify basic diffusion transfer exposure and processing equipment.		
Materials	Identify basic materials and supplies for line photography.		
	Identify basic diffusion transfer materials for making line prints.		
Darkroom procedures	Produce a good quality line negative using sensitivity guide/scale.		
	Produce good quality line print using diffusion transfer process.		
	Properly handle, mix, store, and dispose of hazardous chemicals.		
	Record production time, materials consumption, and quantities on appropriate forms.		
	Read and interpret Material Safety Data Sheets and product labels.		
	Plan and organize work for optimum productivity.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
IMAGE ASSEMBLY		**4**	**6**
Tools and equipment	Identify basic stripping equipment and hand tools.		
	Identify platemaking equipment and tools for offset metal plates.		
	Identify direct and/or electrostatic platemaking equipment.		
Materials and supplies	Identify basic stripping materials and supplies.		
	Identify plate material types and processing chemicals for making offset metal plates.		
	Identify direct and/or electrostatic plate and processing materials.		
Image assembly procedures	Produce a single-color flat with correct dimensions and cut outs.		
	Make necessary corrections to flat (i.e., opaque/scribing).		
	Produce a correctly exposed and processed metal plate for offset printing.		
	Produce a direct and/or electrostatic plate for offset printing.		
	Properly handle, mix, store, and dispose of hazardous chemicals.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
	Record production time, materials consumption, and quantities on appropriate forms.		
	Read and interpret Material Safety Data Sheets and product labels.		
	Plan and organize work for optimum productivity.		
OFFSET DUPLICATOR		**3**	**9**
Parts and operations	Identify basic offset duplicator parts and operations.		
Safety	Identify basic safety and operation procedures for an offset duplicator for single-color printing.		
	Read and interpret Material Safety Data Sheets and product labels.		
	Properly handle, mix, store, and dispose of hazardous chemicals.		
Procedures	Perform basic setup for printing a single-color job.		
	Produce a printed single-color job using an offset duplicator.		
	Perform daily cleanup and scheduled preventive maintenance of the offset press according to manufacturers' specifications.		
	Plan and organize work for optimum productivity.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
	Record production time, materials consumption, and quantities on appropriate forms.		
BINDERY		**5**	**8**
Cutting	Identify operational and safety parts of a paper cutter.		
	Calculate basic paper cuts from stock sheet.		
	Draw a master cutting diagram for making cuts.		
	Make accurate paper cuts using a mechanical paper cutter.		
	Identify die cut products and the basic procedure for die cutting.		
Folding	Identify folding equipment and hand tools.		
	Identify basic folds for printed products.		
	Make a single fold using an automatic folding machine.		
Assembling	Identify collating equipment and hand tools.		
	Make sets of paper using collating equipment in proper sequence.		
	Hand collate sets in proper sequence.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
Binding	Identify stapling and stitching equipment and hand tools.		
	Identify stapling and stitching equipment and supplies.		
	Produce side and saddle stitched/stapled products.		
	Identify punching/drilling equipment and hand tools.		
	Measure to drill 3-ring notebook pages.		
	Make holes for 3-ring notebook.		
Paper	Identify grain direction of paper.		
	Identify basic paper types, weights, grades, and classifications used in the printing industry.		
	Identify padding equipment and hand tools.		
	Produce correctly made pads of paper.		
	Identify padding materials.		
	Identify hot foil stamped products, basic equipment materials, and procedures for foil stamping.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
MEASUREMENT		**4**	**2**
Linear inch measurement	Measure linear dimensions for printing materials in inches and fractions of inches.		
Type measurement	Measure type in points and picas.		
Volume	Measure volume for mixing chemicals for darkroom and pressroom operations.		
Reductions and enlargements	Measure copy for reduction and enlargement using proportion wheel to determine percentage setting.		
SAFETY AND FIRST AID		**10**	**4**
Fires	Identify location(s) of fire safety equipment.		
	Describe proper use of fire safety equipment.		
	List safety rules involving flammable liquids.		
	Read, comprehend, and follow instructions on warning labels.		
	Demonstrate a working knowledge of the safety color code.		
Personal safety	Identify location(s) of first aid kit(s) and eye wash station(s).		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
	Identify protective safety equipment where needed (gloves, goggles, ear plugs).		
	Follow approved shop dress code for safe operation including necessary personal safety equipment.		
	Read, comprehend, and follow instructions on warning labels.		
	Demonstrate a working knowledge of the safety color code.		
Lab safety	List the steps to be taken in case of injury in the lab.		
	Identify location(s) of first aid kit(s) and eye wash station(s).		
	Pass general lab safety test.		
	Pass safety test in individual specialty area(s).		
	Demonstrate common sense when working with others.		
	Demonstrate a working knowledge of the safety color code.		
Materials safety	MSDS - Read and comprehend Material Safety Data Sheets.		
	Use approved methods to dispose of waste materials.		
	Read, comprehend, and follow instructions on warning labels.		

Recommended Outline	After completing this section, the student will:	Hours Class	Lab
	Demonstrate a working knowledge of the safety color code.		
Tools and equipment	Follow proper safety procedures when operating equipment.		
	Read, comprehend, and follow instructions on warning labels.		
	Demonstrate a working knowledge of the safety color code.		
PRINTERS MATH		**17**	**0**
Addition	Solve addition of whole number problems - 2 & 3 digit.		
	Demonstrate a working knowledge of the safety color code.		
	Solve addition of fraction problems.		
	Solve addition of decimal problems - 2 & 3 digit.		
Subtraction	Solve subtraction of whole number problems - 2 & 3 digit.		
	Solve subtraction of fraction problems.		
	Solve subtraction of decimal problems - 2 & 3 digit.		

Recommended Outline	After completing this section, the student will:	Hours Class	Lab
Multiplication	Solve multiplication of whole numbers - 2 & 3 digit.		
	Solve multiplication of fraction problems.		
	Solve multiplication of decimal problems - 2 & 3 digit.		
Division	Solve division of whole number problems - 2 & 3 digits.		
	Solve division of fraction problems.		
	Solve division of decimal problems - 2 & 3 digits.		
Percents and decimals	Solve division of decimal problems - 2 & 3 digits.		
	Solve fraction to decimal conversion problems.		
	Solve decimal to percent conversion problems.		
	Solve percent to decimal conversion problems.		
	Solve decimal to fraction problems.		
Ratio and proportion	Solve basic ratio and proportion problems.		
Measurement	Solve basic linear measurement problems.		
	Solve basic liquid measurement problems.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
	Solve basic points and picas measurement problems.		
	Solve inches to picas conversion problems.		
	Solve picas to inches conversion problems.		
	Solve inches to points conversion problems.		
	Solve points to inches conversion problems.		
Calculation	Solve basic type calculation problems.		
	Solve basic paper cutting calculations.		
	Solve cost calculating problems.		
JOB APPLICATION SKILLS		**6**	**0**
Job listings	List means of locating job openings.		
	Read and comprehend want ads.		
Job application	Write a personal resume.		
	Write a cover letter for obtaining a printing job.		
	Read and comprehend an employment application form.		
	Complete a job employment application form.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
	Write a follow-up letter.		
	Make a follow-up telephone call.		
Interviewing	Practice job interview skills.		
	Complete a telephone interview for a printing job.		
Choosing	Evaluate benefit package for employment.		
	Compare job opportunities.		

FUNDAMENTAL TECHNICAL

PGT 101 - Introduction To The Printing Industry

Resources

Printed References

Bureau, W. H. (1989). *What the printer should know about paper.* Pittsburgh: Graphic Arts Technical Foundation.

Eldred, N. R. (1989). *Solving offset ink problems.* Pittsburgh: Graphic Arts Technical Foundation.

Eldred, N. R., & Scarlett, T. (1989). *What the printer should know about ink.* Pittsburgh: Graphic Arts Technical Foundation.

Forsythe, N., & Saltman, D. (1989). *Lithography primer.* Pittsburgh: Graphic Arts Technical Foundation.

Magee, B. (1989). *Screen printing primer.* Pittsburgh: Graphic Arts Technical Foundation.

Southwick, C., & Vermeersch, L. (1983). *Practical problems in mathematics.* Albany, NY: Delmar.

Strock, L. D. (1989). *Safety practices for the graphic arts.* Pittsburgh: Graphic Arts Technical Foundation.

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SPECIFIC TECHNICAL

BUS 101 - Keyboarding/Typewriting

Course Overview

Course Description

Introduces the touch system of typewriting placing emphasis on correct techniques, mastery of the keyboard, and simple business correspondence. Students attain a minimum typing speed of 25 words per minute with a maximum of three errors on a three minute timed typewriting test. Topics include: alphabetic and numeric symbols, simple formatting, keyboarding speed and accuracy, care of equipment, and proofreading. Laboratory practice parallels class instruction.

Competency Areas

Equipment Care
Symbols
Keyboarding Skills
Formatting Correspondence
Proofreading

Prerequisite

Provisional admission

Credit Hours

5

Contact Hours Per Week

Class - 1

D.Lab - 9

SPECIFIC TECHNICAL

BUS 101 - Keyboarding/Typewriting

Course Outline

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
EQUIPMENT CARE		**1**	**2**
Nonprinting parts maintenance	Demonstrate control in the use and care of the nonprinting parts of the typewriter.		
SYMBOLS		**2**	**26**
Finger control	Demonstrate which fingers control each key on the keyboard and each part of the typewriter. Operate home key anchors to assist in developing location security.		
KEYBOARDING SKILLS		**1**	**28**
Speed and accuracy	Demonstrate keyboarding speed and accuracy on straight copy with a minimum rate of 25 words a minute for 3 minutes with 3 or fewer errors.		
FORMATTING CORRESPONDENCE		**5**	**30**
Centering	Demonstrate an ability to center vertically and horizontally.		
Outlines and notes	Demonstrate basic formatting skills on enumerations, outlines, and personal notes.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
Reports and tables	Demonstrate basic formatting skills on reports, correspondence, and tables for personal use.		
Word division and capitalization	Apply rules for correct use of word division and capitalization in written communications.		
Numbers	Apply rules for correct use of numbers and punctuation in written communications.		
PROOFREADING		**1**	**4**
Locating errors	Demonstrate an ability to locate and correct errors.		
Proofreader's marks	Demonstrate the ability to understand proofreader's marks by marking appropriate corrections in text copy.		

SPECIFIC TECHNICAL

BUS 101 - Keyboarding/Typewriting

Resources

Printed References

Hall, R. A., Lloyd, A. C., Johnson, J. E., Inger, F. E., & Morrison, P. C. (1987). *Gregg typing: Keyboarding and processing documents.* New York: Gregg Division, McGraw Hill.

Sabin, W. (Latest edition). *The Gregg reference manual.* New York: Gregg Division, McGraw Hill.

Silverthorn, J. E., & Perry, D. J. (Latest edition). *Word division manual.* (2nd ed.). Cincinnati: South-Western.

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04-02-01

SPECIFIC TECHNICAL

PGT 102 - Art And Copy Preparation

Course Overview

Course Description

Provides instruction in the first four major steps in Printing/Graphics Technology. This course emphasizes development of knowledge and skills necessary for understanding the importance of proficiency and proper planning to accomplish a successful printing project. Topics include: conventional and computerized methods of design, typesetting, mechanical art, and process photography.

Competency Areas

Design Methods
Art and Copy Principles
Typesetting
Mechanical Art
Process Photography

Prerequisite

PGT 101

Credit Hours

8

Contact Hours Per Week

Class - 6

D.Lab - 4

SPECIFIC TECHNICAL

PGT 102 - Art And Copy Preparation

Course Outline

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
ART AND COPY PRINCIPLES		**6**	**4**
Introduction to art and copy	Identify line art copy.		
	Identify continuous tone copy.		
	Identify process color and printing.		
Tools and equipment	Identify basic layout tools.		
	Identify basic layout materials.		
	Identify basic layout equipment.		
Copyright laws/safety	Identify printers responsibilities and liabilities of copyright laws.		
	Read and interpret M.S.D.S. materials, safety, data, and product labels.		
	Properly handle, mix, store, and dispose of chemicals.		
	Apply safety rules, regulations, and precautions when performing composition procedures.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
TYPESETTING		**6**	**4**
Typography	Identify fundamentals of type and its uses.		
	Identify and use type specification books for a selection of type styles.		
Printer's measurement system	Measure with point and pica system.		
Basic equipment	Identify basic typesetting equipment.		
Basic commands	Identify basic typesetting commands.		
Basic procedures	Identify basic typesetting procedures.		
	Identify and compare the various methods of type composition.		
DESIGN METHODS		**6**	**4**
Design principles	Identify basic principles for design.		
Methods	Prepare a series of differing thumbnail sketches for a printed piece.		
	Prepare completed roughs from thumbnail.		
	Prepare a comprehensive following a complete rough.		

Recommended Outline	After completing this section, the student will:	Hours Class	Lab
Color theory	Identify basic color theory for artist (color wheel).		
Paper	Identify and use paper suitable for booklets for stock selection.		
Ink	Identify and use ink matching systems for ink selection including ink charts.		
MECHANICAL ART		**30**	**20**
Ruling lines	Organize work area for layout/paste-up operations.		
	Check the "true edge" of a table with a T-square.		
	Check the "vertical alignment" of a table using a T-square and triangle.		
	Rule lines with technical pens.		
	Draw and ink circles using compasses and templates.		
	Rule with technical pens on film overlays.		
Scaling copy	Crop artwork and photos.		
	Determine enlargements and reductions using the proportional scale.		
	Crop artwork and photos to scale.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
Layout preparation and markup	Proofread manuscripts for typographical errors.		
	Markup copy for production.		
	Proof and mark manuscripts for typographical errors, using standard proofreader's marks.		
Beginning paste-up	Change contrasts using screen tints and shading sheets.		
	Letter with transfer type.		
	Correct errors on a paste-up.		
	Cut masking film for windows and drop outs.		
	Create a single-color paste-up using clip art.		
	Read and comprehend production information from job ticket/jacket.		
	Record production time, materials consumption, and quantities on appropriate forms.		
Mechanical art: single-color	Silhouette artwork or photos using masking film.		
	Make a single-color paste-up for envelopes and letterheads.		
	Make a single-color paste-up for sheetwise imposition.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
	Make a single-color paste-up for work and turn imposition.		
Mechanical art: multicolor	Make a multicolor paste-up for business cards.		
	Make a multicolor paste-up for sheetwise imposition using register marks and color sequence coding of inks on overlays.		
	Make a multicolor paste-up for work and turn imposition.		
	Make a multicolor paste-up for work and tumble imposition.		
	Make keyline artwork for multicolor printing.		
PROCESS PHOTOGRAPHY		**12**	**8**
Basic theory, equipment materials	Plan and organize work for optimum productivity.		
	Identify basic darkroom process equipment.		
	Identify basic diffusion transfer equipment.		
	Identify basic diffusion transfer materials.		
	Perform daily and periodic clean-up and maintenance of composition equipment.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
Safety	Properly handle, mix, store, and dispose of chemicals.		
Basic line, diffusion transfer, and halftone photography	Make a line print.		
	Make a line reversal print.		
	Make halftone prints.		

SPECIFIC TECHNICAL

PGT 102 - Art And Copy Preparation

Resources

Printed References

Adams, J.M., & Faux, D.D. (1988). *Printing technology.* New York: Delmar.

Beach, M., Shepro, S., & Russon, K. (1987) *Getting it printed.* Portland, OR: Coast to Coast Books.

Craig, J. (1980). *Designing with type: A basic course in typography.* New York: Watson Guptill.

Demoney, J., & Meyer, S.E. (1982). *Pasteups and mechanicals.* New York: Watson Guptill.

Gates, D. (1973). *Type.* New York: Watson Guptill.

Graphic Arts Technical Foundation. (1979). *Introduction to phototypesetting* (learning module). Pittsburgh: Author.

Graphic Arts Technical Foundation. (1979). *Ruling lines* (learning module). Pittsburgh: Author.

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Graphic Arts Technical Foundation. (1988). *The lithographer's manual* (8th ed.). Pittsburgh: Author.

Hofmann, A. (1977). *Graphic design manual: Principles and practices.* New York: Van Nostrand Reinhold.

Vermeersch, L., & Southwick, C. (1983). *Practical problems in mathematics for graphic arts.* New York: Delmar.

Audio Visuals

Dynamic Graphics. (1988). *Desktop design 1* (video cassette). Peoria, IL: Author.

Dynamic Graphics. (1988). *Pasteup 1.* (video cassette). Peoria, IL: Author.

Dynamic Graphics. (1989). *Clip art: Use and fundamentals* (video cassette). Peoria, IL: Author.

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Dynamic Graphics. (1989). *Graphic design 1* (video cassette). Peoria, IL: Author.

Dynamic Graphics. (1989). *Graphic design* 2 (video cassette). Peoria, IL: Author.

Dynamic Graphics. (1989). *Pasteup 2* (video cassette). Peoria, IL: Author.

Dynamic Graphics. (1989). *Pasteup 3* (video cassette). Peoria, IL: Author.

Dynamic Graphics. (1989). *Printing basics 1* (video cassette). Peoria, IL: Author.

Dynamic Graphics. (1989). *Studio short cuts* (video cassette). Peoria, IL: Author.

Sacco, R. (1986). *Typesetting and pasteup* (video cassette). Spokane, WA: Sunshine Enterprises.

SPECIFIC TECHNICAL

PGT 103 - Introduction To Type Composition

Course Overview

Course Description

Introduces type composition and equipment used to produce quality characters and symbols in preparation for the printed page. This course emphasizes modern forms of composition systems and requires both keyboarding and computer literacy. Topics include: principles, equipment and material identification, composition and proofreading, operations, organization and maintenance procedures, troubleshooting and desktop publishing basics.

Competency Areas

Principles Introduction
Plan and Organize Work Methods
Equipment and Materials Identification
Composition and Proofreading Operations
Safety and Maintenance Procedures
Troubleshooting
Desktop Publishing Basics

Prerequisites

BUS 101, CIS 102, PGT 101

Credit Hours

7

Contact Hours Per Week

Class - 5

D.Lab - 5

SPECIFIC TECHNICAL

PGT 103 - Introduction To Type Composition

Course Outline

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
PRINCIPLES INTRODUCTION		**20**	**0**
Basic principles	Identify basic typesetting procedure.		
	Measure with point and pica system.		
	Identify and compare the various methods of type composition.		
	Identify and use type specification books for a selection of type styles.		
Composition systems	Identify basic typesetting equipment.		
	Identify basic darkroom process equipment.		
	Letter with transfer type.		
	Identify composition equipment.		
	Identify and compare the various methods of type composition.		
	Identify types of software and their applications (i.e., word processing, pagination, graphics, scanning, spread sheets).		
	Describe the differences between first-, second-, third-, and fourth-generation phototypesetters.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
	Discuss the three major components in a computer system and explain the difference between hardware and software.		
	List and describe the components of a typical computer composition system, including typical input/output devices.		
	State the differences between code- and menu-driven composition systems.		
PLAN AND ORGANIZE WORK METHODS		**10**	**0**
Job ticket considerations	Use job information to mark up copy for composition.		
	Plan and organize work for optimum productivity.		
	Record production time, materials consumption, and quantities on appropriate forms.		
	Read and comprehend production information from job ticket/jacket.		
Work area organization	Mark up copy for production.		
	Perform file management procedures.		
	Plan and organize production flow for composition.		
	Use correct methods to produce galley proofs.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
	Perform daily and periodic clean-up and maintenance of composition equipment.		
	Prepare composition equipment for operation (i.e., typesetter, processor, computer, laser printers).		
EQUIPMENT AND MATERIALS IDENTIFICATION		**10**	**0**
Type composition equipment	Identify basic typesetting equipment.		
	Identify composition equipment.		
	Operate a graphics/text scanner.		
	Identify types of software and their applications (i.e., word processing, pagination, graphics, scanning, spread sheets).		
	Describe three methods of providing input to a computer composition system.		
Type compostion materials	Identify and use paper suitable for booklets for stock selection.		
	Identify types of software and their applications (i.e., word processing, pagination, graphics, scanning, spread sheets).		
	Discuss the differences between paper tape, magnetic tape, and magnetic disk storage.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
COMPOSITION AND PROOFREADING OPERATIONS		**5**	**40**
Typesetter preparation	Identify basic typesetting commands.		
	Identify basic typesetting procedure.		
Identify composition commands and formats	Prepare composition equipment for operation (i.e., typesetter, processor, computer, laser printers).		
	Plan and organize work for optimum productivity.		
Processor preparation	Properly handle, mix, store, and dispose of chemicals.		
	Identify and troubleshoot composition problems in hardware, software, or chemistry.		
	Read and interpret M.S.D.S. materials, safety, data, and product labels.		
	Apply safety rules, regulations, and precautions when performing composition procedures.		
	Prepare composition equipment for operation (i.e., typesetter, processor, computer, laser printers).		
	Describe how a computer represents information in memory and explain the terms "dot matrix," "bit," and "pixel."		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
Typesetter operation	Set type using correct format, size, family, etc.		
	Input copy and commands to produce straight composition.		
	Input copy and commands to produce tabular composition.		
	Use correct methods to produce galley proofs.		
	Use job information to mark up copy for composition.		
	Plan and organize production flow for composition.		
	Identify and troubleshoot composition problems in hardware, software, or chemistry.		
	Perform editing to correct composition.		
	Perform file management procedures.		
	Operate a graphics/text scanner.		
	Input commands to perform advanced composition and/or graphic imaging, like pagination, telecommunications.		
	Perform page make up by integrating text and graphic files or images.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
Proofreading	Proof and mark manuscripts for typographical errors, using standard proofreader's marks. Proofread manuscripts for typographical errors.		
SAFETY AND MAINTENANCE PROCEDURES		**0**	**5**
Safety consideration	Apply safety rules, regulations, and precautions when performing composition procedures. Read and interpret M.S.D.S. materials, safety, data, and product labels. Identify printers responsibilities and liabilities of copyright laws. Properly handle, mix, store, and dispose of chemicals.		
Maintenance	Perform daily and periodic clean-up and maintenance of composition equipment.		
TROUBLESHOOTING		**0**	**3**
Hardware Software Chemistry	Identify and troubleshoot composition problems in hardware, software, or chemistry.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
DESKTOP PUBLISHING BASICS		**5**	**2**
Terminology	Identify and use current desktop publishing terminology. State the difference between traditional composition systems and desktop systems.		
Advantages	Discuss the advantage desktop publishing offers.		
Limitations	Discuss the limitations presented by desktop publishing.		

SPECIFIC TECHNICAL

PGT 103 - Introduction To Type Composition

Resources

Printed References

Adams, J. M., & Faux, D.D. (1988). *Printing technology.* New York: Delmar.

Beach, M., Shepro, S., & Russon, K. (1987). *Getting it printed.* Portland, OR: Coast to Coast Books.

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Dynamic Graphics. (1989). *Pasteup 3* (video cassette). Peoria, IL: Author.

Dynamic Graphics. (1989). *Printing basics 1* (video cassette). Peoria, IL: Author.

Dynamic Graphics. (1989). *Studio short cuts* (video cassette). Peoria, IL: Author.

Sacco, R. (1986). *Typesetting and pasteup* (video cassette). Spokane, WA: Sunshine Enterprises.

SPECIFIC TECHNICAL

PGT 104 - Desktop Publishing For Graphic Technology

Course Overview

Course Description

Provides instruction on composition processes and procedures beyond the basic level. Emphasizes production of camera ready copy using desktop publishing systems. Combines various forms of composition software. Topics include: computers, software, and peripherals identification; generation and manipulation of computer images; and safety and maintenance procedures.

Competency Areas

Computers, Software, and Peripherals Identification
Generation and Manipulation of Computer Images
Safety and Maintenance Procedures

Prerequisites

BUS 101, CIS 102, PGT 101

Credit Hours

3

Contact Hours Per Week

Class - 2

D.Lab - 3

SPECIFIC TECHNICAL

PGT 104 - Desktop Publishing For Graphic Technology

Course Outline

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
COMPUTERS, SOFTWARE, AND PERIPHERALS IDENTIFICATION		**2**	**3**
Introduction to desktop publishing equipment and peripherals	Identify composition equipment.		
	Identify composition commands and formats.		
Introduction to desktop publishing software	Identify types of software and their applications (i.e., word processing, pagination, graphics, scanning, spread sheet).		
GENERATION AND MANIPULATION OF COMPUTER IMAGES		**16**	**24**
Set-up	Prepare composition equipment for operation (i.e., typesetter, processor, computer, laser printers).		
	Plan and organize production flow for composition.		
	Use job information to mark up copy for composition.		
File management	Perform file management procedures.		
Camera ready copy	Input copy and commands to produce straight composition.		
	Input copy and commands to produce tabular composition.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
	Input commands to perform advanced composition and/or graphic imaging, like pagination, telecommunications.		
	Perform page make up by integrating text and graphic files or images.		
	Operate a graphics/text scanner.		
	Use correct methods to produce galley proofs.		
Editing and troubleshooting	Identify and troubleshoot composition problems in hardware, software, or chemistry.		
	Perform editing to correct composition.		
SAFETY AND MAINTENANCE PROCEDURES		**2**	**3**
Safety	Properly handle, mix, store, and dispose of chemicals.		
	Apply safety rules, regulations, and precautions when performing composition procedures.		
	Read and interpret M.S.D.S. materials, safety, data, and product labels.		
Maintenance	Perform daily and periodic clean-up and maintenance of composition equipment.		

SPECIFIC TECHNICAL

PGT 104 - Desktop Publishing For Graphic Technology

Resources

Printed References

Adams, J. M., & Faux, D.D. (1988). *Printing technology.* New York: Delmar.

Beach, M., Shepro, S., & Russon, K. (1987). *Getting it printed.* Portland, OR: Coast to Coast Books.

Craig, J. (1980). *Designing with type: A basic course in typography.* New York: Watson Guptill.

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Dynamic Graphics. (1989). *Printing basics 1* (video cassette). Peoria, IL: Author.

Dynamic Graphics. (1989). *Studio short cuts* (video cassette). Peoria, IL: Author.

Sacco, R. (1986). *Typesetting and pasteup* (video cassette). Spokane, WA: Sunshine Enterprises.

SPECIFIC TECHNICAL

PGT 105 - Advanced Type Composition

Course Overview

Course Description

Provides instruction in composition processes and procedures at an advanced level. Topics include: advanced composition processes and procedures introduction, plan and organize work methods, and safety and maintenance procedures.

Competency Areas

Advanced Composition Processes and
Procedures Introduction
Plan and Organize Work Methods
Safety and Maintenance Procedures

Prerequisite/Corequisite

PGT 104

Credit Hours

4

Contact Hours Per Week

Class - 3

P.Lab - 2

D.Lab - 2

SPECIFIC TECHNICAL

PGT 105 - Advanced Type Composition

Course Outline

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
ADVANCED COMPOSITION PROCESSES AND PROCEDURES INTRODUCTION		**26**	**36**
Review straight composition	Set type using correct format, size, family, etc.		
	Prepare composition equipment for operation (i.e., typesetter, processor, computer, laser printers).		
	Perform file management procedures.		
	Input copy and commands to produce straight composition.		
	Use correct methods to produce galley proofs.		
	Identify and troubleshoot composition problems in hardware, software, or chemistry.		
	Operate a graphics/text scanner.		
	Perform editing to correct composition.		
	Proof and mark manuscripts for typographical errors, using standard proofreader's marks.		

Recommended Outline	After completing this section, the student will:	Hours Class	Lab
Tabular composition	Input copy and commands to produce tabular composition.		
	Advanced composition and graphic imaging.		
	Input commands to perform advanced composition and/or graphic imaging, like pagination, telecommunications.		
	Perform page make up by integrating text and graphic files or images.		
	Use correct methods to produce galley proofs.		
	Perform file management procedures.		
	Proof and mark manuscripts for typographical errors, using standard proofreader's marks.		
	Operate a graphics/text scanner.		
PLAN AND ORGANIZE WORK METHODS		**1**	**0**
	Plan and organize production flow for composition.		
	Use job information to mark up copy for composition.		
	Perform file management procedures.		
	Record production time, materials consumption, and quantities on appropriate forms.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
SAFETY AND MAINTENANCE PROCEDURES		**3**	**4**
	Properly handle, mix, store, and dispose of chemicals.		
	Apply safety rules, regulations, and precautions when performing composition procedures.		
	Perform daily and periodic clean-up and maintenance of composition equipment.		
	Read and interpret M.S.D.S. materials, safety, data, and product labels.		

SPECIFIC TECHNICAL

PGT 105 - Advanced Type Composition

Resources

Printed References

Adams, J. M., & Faux, D. D. (1988). *Printing technology.* New York: Delmar.

Beach, M., Shepro, S., & Russon, K. (1987). *Getting it printed.* Portland, OR: Coast to Coast Books.

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Graphic Arts Technical Foundation. (1979). *Ruling lines* (learning module). Pittsburgh: Author.

Graphic Arts Technical Foundation. (1980). *Scaling copy* (learning module). Pittsburgh: Author.

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Graphic Arts Technical Foundation. (1985). *Beginning pasteup* (learning module). Pittsburgh: Author.

Graphic Arts Technical Foundation. (1986). *Layout preparation and markup* (learning module). Pittsburgh: Author.

Graphic Arts Technical Foundation. (1986). *Typography II* (learning module). Pittsburgh: Author.

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Graphic Arts Technical Foundation. (1988). *The lithographer's manual* (8th ed.). Pittsburgh: Author.

Hofmann, A. (1977). *Graphic design manual: Principles and practices.* New York: Van Nostrand Reinhold.

Vermeersch, L., & Southwick, C. (1983). *Practical problems in mathematics for graphic arts.* New York: Delmar.

Audio Visuals

Dynamic Graphics. (1988). *Desktop design 1* (video cassette). Peoria, IL: Author.

Dynamic Graphics. (1988). *Pasteup 1.* (video cassette). Peoria, IL: Author.

Dynamic Graphics. (1989). *Clip art: Use and fundamentals* (video cassette). Peoria, IL: Author.

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Dynamic Graphics. (1989). *Graphic design* 2 (video cassette). Peoria, IL: Author.

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Dynamic Graphics. (1989). *Pasteup 3* (video cassette). Peoria, IL: Author.

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Dynamic Graphics. (1989). *Studio short cuts* (video cassette). Peoria, IL: Author.

Sacco, R. (1986). *Typesetting and pasteup* (video cassette). Spokane, WA: Sunshine Enterprises.

SPECIFIC TECHNICAL

PGT 106 - Art And Copy Preparation Practicum/ Internship

Course Overview

Course Description

Provides students with either a body of work to be done in the classroom to industry standards or placement in a local graphic arts facility to work on a prescribed grouping of competencies. Topics include one or more of the following: design work, typesetting, mechanical art, process photography, composition operations, and organization and maintenance procedures.

Competency Areas

Design Work
Typesetting
Mechanical Art
Process Photography
Composition Operations
Organization and Maintenance

Prerequisites

All Art and Copy Preparation courses except PGT 107, Program admission

Credit Hours

11

Contact Hours Per Week

Class - 1

O.B.I. - 30

SPECIFIC TECHNICAL

PGT 106 - Art And Copy Preparation Practicum/ Internship

Course Outline

Recommended Outline	After completing this section, the student will:	Hours Class	Hours OBI
DESIGN WORK		**2**	**50**
Thumbnail	Prepare a series of differing thumbnail sketches for a printed piece.		
Roughs	Prepare completed roughs from thumbnail.		
Comprehensive	Prepare a comprehensive following a complete rough.		
TYPESETTING		**2**	**50**
Straight	Set type using correct format, size, family, etc. Input copy and commands to produce straight composition.		
Tabular	Input copy and commands to produce tabular composition.		
Advanced/graphic imaging	Input commands to perform advanced composition and/or graphic imaging, like pagination, telecommunications. Perform page make up by integrating text and graphic files or images.		

Recommended Outline	After completing this section, the student will:	Hours Class	OBI
	Operate a graphics/text scanner.		
Troubleshooting	Identify and troubleshoot composition problems in hardware, software, or chemistry.		
	Perform editing to correct composition.		
MECHANICAL ART		**2**	**50**
Single-color	Make a single-color paste-up for envelopes and letterheads.		
	Make a single-color paste-up for sheetwise imposition.		
	Create a single-color paste-up using clip art.		
	Make a single-color paste-up for work and turn imposition.		
	Make a single-color paste-up for work and tumble imposition.		
	Make a single-color paste-up for a tri-fold brochure.		
	Make a dummy for a multipage signature.		
	Prepare a paste-up for a multipage booklet.		
Muticolor	Make a multicolor paste-up for business cards.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours OBI
	Make a multicolor paste-up for sheetwise imposition using register marks and color sequence coding of inks on overlays.		
	Make a multicolor paste-up for work and turn imposition.		
	Make a multicolor paste-up for work and tumble imposition.		
	Make keyline artwork for multicolor printing.		
PROCESS PHOTOGRAPHY		**2**	**50**
Line	Make a line print.		
	Make a line reversal print.		
Diffusion transfer	Make a line print.		
	Make a line reversal print.		
Halftone	Make halftone prints.		
COMPOSITION OPERATIONS		**1**	**50**
Straight	Set type using correct format, size, family, etc.		
	Input copy and commands to produce straight composition.		
Tabular			
	Input copy and commands to produce tabular composition.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours OBI
Graphics imaging	Input commands to perform advanced composition and/or graphic imaging, like pagination, telecommunications.		
	Perform page make up by integrating text and graphic files or images.		
	Operate a graphics/text scanner.		
	Identify and troubleshoot composition problems in hardware, software, or chemistry.		
	Perform editing to correct composition.		
Troubleshooting	Identify and troubleshoot composition problems in hardware, software, or chemistry.		
	Perform editing to correct composition.		
ORGANIZATION AND MAINTENANCE		**1**	**50**
Plan and organize	Plan and organize work for optimum productivity.		
	Record production time, materials consumption, and quantities on appropriate forms.		
	Plan and organize production flow for composition.		

Recommended Outline	After completing this section, the student will:	Hours Class OBI
Maintenance	Perform daily and periodic cleanup and maintenance of composition equipment.	
Safety	Apply safety rules, regulations, and precautions when performing composition procedures. Properly handle, mix, store, and dispose of chemicals. Read and interpret M.S.D.S. materials, safety, data, and product labels.	

SPECIFIC TECHNICAL

PGT 106 - Art And Copy Preparation Practicum/Internship

Resources

Printed References

Adams, J. M., & Faux, D. D. (1988). *Printing technology.* New York: Delmar.

Beach, M., Shepro, S., & Russon, K. (1987). *Getting it printed.* Portland, OR: Coast to Coast Books.

Craig, J. (1980). *Designing with type: A basic course in typography.* New York: Watson Guptill.

Demoney, J., & Meyer, S. E. (1982). *Pasteups and mechanicals.* New York: Watson Guptill.

Gates, D. (1973). *Type.* New York: Watson Guptill.

Graphic Arts Technical Foundation. (1979). *Introduction to phototypesetting* (learning module). Pittsburgh: Author.

Graphic Arts Technical Foundation. (1979). *Ruling lines* (learning module). Pittsburgh: Author.

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Graphic Arts Technical Foundation. (1981). *Typography I (0201)* (learning module). Pittsburgh: Author.

Graphic Arts Technical Foundation. (1985). *Beginning pasteup* (learning module). Pittsburgh: Author.

Graphic Arts Technical Foundation. (1986). *Layout preparation and markup* (learning module). Pittsburgh: Author.

Graphic Arts Technical Foundation. (1986). *Typography II* (learning module). Pittsburgh: Author.

Resources

Graphic Arts Technical Foundation. (1988). *The lithographer's manual* (8th ed.). Pittsburgh: Author.

Hofmann, A. (1977). *Graphic design manual: Principles and practices.* New York: Van Nostrand Reinhold.

Vermeersch, L., & Southwick, C. (1983). *Practical problems in mathematics for graphic arts.* New York: Delmar.

Audio Visuals

Dynamic Graphics. (1988). *Desktop design 1* (video cassette). Peoria, IL: Author.

Dynamic Graphics. (1988). *Pasteup 1.* (video cassette). Peoria, IL: Author.

Dynamic Graphics. (1989). *Clip art: Use and fundamentals* (video cassette). Peoria, IL: Author.

Dynamic Graphics. (1989). *Desktop design 2* (video cassette). Peoria, IL: Author.

Dynamic Graphics. (1989). *Graphic design 1* (video cassette). Peoria, IL: Author.

Dynamic Graphics. (1989). *Graphic design 2* (video cassette). Peoria, IL: Author.

Dynamic Graphics. (1989). *Pasteup 2* (video cassette). Peoria, IL: Author.

Dynamic Graphics. (1989). *Pasteup 3* (video cassette). Peoria, IL: Author.

Dynamic Graphics. (1989). *Printing basics 1* (video cassette). Peoria, IL: Author.

Dynamic Graphics. (1989). *Studio short cuts* (video cassette). Peoria, IL: Author.

Sacco, R. (1986). *Typesetting and pasteup* (video cassette). Spokane, WA: Sunshine Enterprises.

SPECIFIC TECHNICAL

PGT 107 - Art And Copy Preparation Internship

Course Overview

Course Description

Provides an approved industry setting for skill development and improvement. Emphasis is placed on obtaining experience in all phases of art and copy preparation. Topics include one or more of the following: design work, typesetting, mechanical art, process photography, composition operations, organization and maintenance procedures, and desktop publishing operations.

Competency Areas

Design Work
Typesetting
Mechanical Art
Process Photography
Composition Operations
Organization and Maintenance
Desktop Publishing Operations

Prerequisites

All other courses within the Art and Copy Preparation specialization, Program admission

Credit Hours

10

Contact Hours Per Week

Class - 0

O.B.I. - 30

SPECIFIC TECHNICAL

PGT 107 - Art And Copy Preparation Internship

Course Outline

Recommended Outline	After completing this section, the student will:	Hours Class	Hours OBI
DESIGN WORK		**0**	**40**
Thumbnail	Prepare a series of differing thumbnail sketches for a printed piece.		
Roughs	Prepare completed roughs from thumbnail.		
Comprehensive	Prepare a comprehensive following a complete rough.		
TYPESETTING		**0**	**40**
Straight	Set type using correct format, size, family, etc.		
	Input copy and commands to produce straight composition.		
Tabular	Input copy and commands to produce tabular composition.		
Advanced graphic imaging	Input commands to perform advanced composition and/or graphic imaging, like pagination, telecommunications.		
	Perform page make up by integrating text and graphic files or images.		
	Operate a graphics/text scanner.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours OBI
Troubleshooting	Identify and troubleshoot composition problems in hardware, software, or chemistry.		
	Perform editing to correct composition.		
MECHANICAL ART		**0**	**40**
Single-color	Make a single-color paste-up for envelopes and letterheads.		
	Make a single-color paste-up for sheetwise imposition.		
	Create a single-color paste-up using clip art.		
	Make a single-color paste-up for work and turn imposition.		
	Make a single-color paste-up for work and tumble imposition.		
	Make a single-color paste-up for a tri-fold brochure.		
	Make a dummy for a multipage signature.		
	Prepare a paste-up for a multipage booklet.		
Multicolor	Make a multicolor paste-up for business cards.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours OBI
	Make a multicolor paste-up for sheetwise imposition using register marks and color sequence coding of inks on overlays.		
	Make a multicolor paste-up for work and turn imposition.		
	Make a multicolor paste-up for work and tumble imposition.		
	Make keyline artwork for multicolor printing.		
PROCESS PHOTOGRAPHY		**0**	**40**
Line	Make a line print.		
	Make a line reversal print.		
Diffusion transfer	Make a line print.		
	Make a line reversal print.		
Halftone	Make halftone prints.		
COMPOSITION OPERATIONS		**0**	**60**
Straight	Set type using correct format, size, family, etc.		
	Input copy and commands to produce straight composition.		
Tabular	Input copy and commands to produce tabular composition.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours OBI
Graphics imaging	Input commands to perform advanced composition and/or graphic imaging, like pagination, telecommunications. Perform page make up by integrating text and graphic files or images. Operate a graphics/text scanner. Identify and troubleshoot composition problems in hardware, software, or chemistry. Perform editing to correct composition.		
Troubleshooting	Identify and troubleshoot composition problems in hardware, software, or chemistry. Perform editing to correct composition.		
ORGANIZATION AND MAINTENANCE		**0**	**20**
Plan and organize	Plan and organize work for optimum productivity. Record production time, materials consumption, and quantities on appropriate forms. Plan and organize production flow for composition.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours OBI
Maintenance	Perform daily and periodic cleanup and maintenance of composition equipment.		
Safety	Apply safety rules, regulations, and precautions when performing composition procedures.		
	Properly handle, mix, store, and dispose of chemicals.		
	Read and interpret M.S.D.S. materials, safety, data, and product labels.		
DESKTOP PUBLISHING OPERATIONS		**0**	**60**
Straight	Set type using correct format, size, family, etc.		
	Input copy and commands to produce straight composition.		
Tabular	Input copy and commands to produce tabular composition.		
Graphics imaging	Input commands to perform advanced composition and/or graphic imaging, like pagination, telecommunications.		
	Perform page make up by integrating text and graphic files or images.		

Recommended Outline	After completing this section, the student will:	Hours Class OBI
	Operate a graphics/text scanner.	
	Identify and troubleshoot composition problems in hardware, software, or chemistry.	
	Perform editing to correct composition.	
Troubleshooting	Identify and troubleshoot composition problems in hardware, software, or chemistry.	
	Perform editing to correct composition.	

SPECIFIC TECHNICAL

PGT 107 - Art And Copy Preparation Internship

Resources

Printed References

Adams, J. M., & Faux, D. D. (1988). *Printing technology.* New York: Delmar.

Beach, M., Shepro, S., & Russon, K. (1987). *Getting it printed.* Portland, OR: Coast to Coast Books.

Craig, J. (1980). *Designing with type: A basic course in typography.* New York: Watson Guptill.

Demoney, J., & Meyer, S. E. (1982). *Pasteups and mechanicals.* New York: Watson Guptill.

Gates, D. (1973). *Type.* New York: Watson Guptill.

Graphic Arts Technical Foundation. (1979). *Introduction to phototypesetting* (learning module). Pittsburgh: Author.

Graphic Arts Technical Foundation. (1979). *Ruling lines* (learning module). Pittsburgh: Author.

Graphic Arts Technical Foundation. (1980). *Scaling copy* (learning module). Pittsburgh: Author.

Graphic Arts Technical Foundation. (1981). *Typography I (0201)* (learning module). Pittsburgh: Author.

Graphic Arts Technical Foundation. (1985). *Beginning pasteup* (learning module). Pittsburgh: Author.

Graphic Arts Technical Foundation. (1986). *Layout preparation and markup* (learning module). Pittsburgh: Author.

Graphic Arts Technical Foundation. (1986). *Typography II* (learning module). Pittsburgh: Author.

Resources

Graphic Arts Technical Foundation. (1988). *The lithographer's manual* (8th ed.). Pittsburgh: Author.

Hofmann, A. (1977). *Graphic design manual: Principles and practices.* New York: Van Nostrand Reinhold.

Vermeersch, L., & Southwick, C. (1983). *Practical problems in mathematics for graphic arts.* New York: Delmar.

Audio Visuals

Dynamic Graphics. (1988). *Desktop design 1* (video cassette). Peoria, IL: Author.

Dynamic Graphics. (1988). *Pasteup 1.* (video cassette). Peoria, IL: Author.

Dynamic Graphics. (1989). *Clip art: Use and fundamentals* (video cassette). Peoria, IL: Author.

Dynamic Graphics. (1989). *Desktop design 2* (video cassette). Peoria, IL: Author.

Dynamic Graphics. (1989). *Graphic design 1* (video cassette). Peoria, IL: Author.

Dynamic Graphics. (1989). *Graphic design 2* (video cassette). Peoria, IL: Author.

Dynamic Graphics. (1989). *Pasteup 2* (video cassette). Peoria, IL: Author.

Dynamic Graphics. (1989). *Pasteup 3* (video cassette). Peoria, IL: Author.

Dynamic Graphics. (1989). *Printing basics 1* (video cassette). Peoria, IL: Author.

Dynamic Graphics. (1989). *Studio short cuts* (video cassette). Peoria, IL: Author.

Sacco, R. (1986). *Typesetting and pasteup* (video cassette). Spokane, WA: Sunshine Enterprises.

SPECIFIC TECHNICAL

PGT 109 - Reproduction Photography

Course Overview

Course Description

Introduces concepts, equipment, materials, and procedures used in reproduction photography. Emphasizes fundamental procedures and accuracy in basic contacting and line photography. Topics include: terminology and safety, equipment and materials handling, line photography basics, introduction to halftone theory, and darkroom contacting basics.

Competency Areas

Terminology and Safety
Equipment and Materials Handling
Line Photography Basics
Introduction to Halftone Theory
Darkroom Contacting Basics

Prerequisite

PGT 101

Corequisite

PGT 111

Credit Hours

5

Contact Hours Per Week

Class - 2

P.Lab - 6

D.Lab - 2

SPECIFIC TECHNICAL

PGT 109 - Reproduction Photography

Course Outline

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
TERMINOLOGY AND SAFETY		**6**	**3**
Safety	Read and comprehend production information from job ticket/jacket.		
	Identify safety considerations for darkroom operations.		
	Practice safe work habits in darkroom operations.		
Terminology	Identify basic parts of a reproduction process camera.		
	Identify basic parts of a darkroom contacting unit.		
	Identify basic components of a diffusion transfer unit.		
	Identify safe lights and their uses with different kinds of film.		
	Identify film processing and developing equipment.		
EQUIPMENT AND MATERIALS HANDLING		**4**	**3**
Equipment operations	Demonstrate operations of process camera.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
	Demonstrate operations of contacting darkroom unit.		
	Demonstrate operations of bright light contacting unit.		
	Demonstrate operation of diffusion transfer processing equipment.		
Materials	Identify characteristics of film.		
	Identify kinds of film.		
	Identify and match safelights to film requirements.		
	Identify film processing procedure.		
	Identify chemicals used in processing film.		
	Prepare chemicals for processing film using correct temperature and mixing ratios.		
LINE PHOTOGRAPHY BASICS		**4**	**24**
Basic theory	Set percentages of process camera accurately using proportional scale for determining size changes of copy.		
	Conduct standard exposure tests for line film.		
	Conduct standard exposure tests for different line diffusion transfer materials.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
	Conduct standard exposure tests for contacting line material in the darkroom.		
	Identify characteristics for sensitivity guide.		
	Position sensitivity guide on copying appropriate areas depending on type and process work use.		
Practical operations	Identify density ratings on a step guide.		
	Increase or decrease exposure time using density ratings on a step guide as a guide to determine new time.		
	Produce line negative using appropriate camera settings and processing procedures.		
	Produce diffusion transfer line print using appropriate camera settings and processing procedures.		
INTRODUCTION TO HALFTONE THEORY		**4**	**30**
Basic theory	Identify line and halftone copy.		
	Identify reflection and transmission copy, both color and black and white.		
	Identify basic special effects and procedures for mezzotint, posterization and others.		
	Identify basic halftone theory.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
	Identify densitometers (both reflective and transmission) and their uses.		
	Identify halftone screen type percentages.		
	Identify halftone exposure calculators.		
	Identify halftone shooting procedures.		
	Identify halftone developing procedures.		
Identification/procedures	Run exposure tests for main, shadow, and bump exposures.		
	Compute halftone exposures.		
	Make halftone negative.		
	Evaluate halftone negative.		
DARKROOM CONTACTING BASICS		**2**	**20**
Basic theory	Demonstrate operations of contacting darkroom unit.		
	Demonstrate operations of bright light contacting unit.		
Contacting operations	Conduct standard exposure tests for contacting line material in the darkroom.		
	Identify basic parts of a darkroom contacting unit.		

SPECIFIC TECHNICAL

PGT 109 - Reproduction Photography

Resources

Printed References

Cogoli, J. E. (1988). *Graphics arts photography: Black and white* (2nd ed.). Pittsburgh: Graphic Arts Technical Foundation.

Blair, R. N., Destree, T. M., & Wentzel, F. (1987). *Graphic arts photography: Color* (2nd ed.). Pittsburgh: Graphic Arts Technical Foundation.

SPECIFIC TECHNICAL

PGT 110 - Image Assembly

Course Overview

Course Description

Introduces concepts, equipment, materials, and procedures used in basic image assembly and platemaking techniques. Emphasizes fundamental procedures and accuracy for single-color work and simple multicolor work. Topics include: terminology and safety, equipment and tool identification, basic film assembly techniques, basic multicolor and complementary flat assembly techniques, basic contacting techniques, and basic pin register systems.

Competency Areas

Terminology and Safety
Equipment and Tool Identification
Basic Film Assembly Techniques
Basic Multicolor and Complementary Flat Assembly Techniques
Basic Contacting Techniques
Basic Pin Register Systems

Prerequisite

PGT 101

Corequisite

PGT 109

Credit Hours

2

Contact Hours Per Week

Class - 1

P.Lab - 2

D.Lab - 2

SPECIFIC TECHNICAL

PGT 110 - Image Assembly

Course Outline

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
TERMINOLOGY AND SAFETY		**1**	**1**
Terminology	Read and comprehend production information from job ticket/jacket.		
	Identify safety considerations in stripping operations.		
	Practice safe work habits in stripping operations.		
	Set up stripping area for production.		
EQUIPMENT AND TOOL IDENTIFICATION		**2**	**2**
Equipment	Establish "true edge" and "vertical alignment" on a stripping table (square up).		
Tools	Identify hand tools in stripping.		
	Identify materials in stripping.		
	Identify production equipment in stripping.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
BASIC FILM ASSEMBLY TECHNIQUES		**1**	**10**
Terminology/theory	Layout, measure, and rule an unlined masking sheet showing relevant guidelines (edge of sheet, gripper margins, plate clamp, center marks, etc.) for 8 1/2" x 11" single-color work.		
Basic techniques/projects	Layout, measure, and rule an unlined masking sheet showing relevant guidelines (edge of sheet, gripper margins, plate clamp, center marks, etc.) for 11" x 17" single-color work. Assemble and strip single-color flat for 11" x 17" using preruled masking sheet. Layout, measure, and rule an unlined masking sheet showing relevant guidelines (edge of sheet, gripper margins, plate clamp, center marks, etc.) for 8 1/2" x 11" multicolor work using pin register system.		
BASIC MULTICOLOR AND COMPLEMENTARY FLAT ASSEMBLY TECHNIQUES		**1**	**10**
Basic multicolor techniques	Strip a flat for single-color work and turn imposition. Layout, measure, and rule an unlined masking sheet showing relevant guidelines (edge of sheet, gripper margins, plate clamp, center marks, etc.) for 11" x 17" single-color work.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
	Strip a single-color flat that includes screen tints.		
	Strip single-color flat for a 4 page signature.		
	Strip single-color flat for an 8 page signature.		
Complementary flats	Strip a line and halftone combination flat.		
	Strip a multicolor job with color quality control bars for a 4 page signature.		
BASIC CONTACTING TECHNIQUES		**3**	**10**
Theory/basics	Identify daylight contacting equipment.		
	Identify daylight contacting material.		
	Conduct an exposure test on daylight materials.		
Contacting project/tasks	Produce a composite negative using daylight material.		
	Perform compositing - black and white.		
	Calculate dot-for-dot exposures.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
BASIC PIN REGISTER SYSTEMS		**2**	**7**
Theory/basics	Identify types of register control pin systems.		
Application	Layout, measure, and rule an unlined masking sheet showing relevant guidelines (edge of sheet, gripper margins, plate clamp, center marks, etc.) for 8 1/2" x 11" multicolor work using pin register system.		

SPECIFIC TECHNICAL

PGT 110 - Image Assembly

Resources

Printed References

Peck, H. L. (1989). *Stripping: The assembly of film images.* Pittsburgh: Graphic Arts Technical Foundation.

SPECIFIC TECHNICAL

PGT 111 - Image Assembly/Platemaking

Course Overview

Course Description

Provides instruction in concepts, equipment, materials, and procedures in image assembly and platemaking techniques. Emphasizes procedures and accuracy in the production of single-color work and simple multicolor work. Topics include: terminology and safety, equipment and tool identification, film assembly techniques, multicolor and complementary flat assembly techniques, contacting techniques, pin register systems, and platemaking.

Competency Areas

Terminology and Safety
Equipment and Tool Identification
Film Assembly Techniques
Multicolor and Complementary Flat Assembly Techniques
Contacting Techniques
Pin Register Systems
Platemaking

Prerequisite/Corequisite

PGT 110

Credit Hours

4

Contact Hours Per Week

Class - 1

P.Lab - 7

D.Lab - 2

SPECIFIC TECHNICAL

PGT 111 - Image Assembly/Platemaking

Course Outline

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
TERMINOLOGY AND SAFETY		**1**	**1**
Basic terminology/theory	Read and comprehend production information from job ticket/jacket.		
Safety	Identify safety considerations in stripping operations.		
	Practice safe work habits in stripping operations.		
EQUIPMENT AND TOOL IDENTIFICATION		**1**	**2**
Equipment uses	Identify materials in stripping.		
	Identify production equipment in stripping.		
Tool uses	Identify hand tools in stripping.		
	Set up stripping area for production.		
FILM ASSEMBLY TECHNIQUES		**2**	**27**
Basic assembly	Establish "true edge" and "vertical alignment" on a stripping table (square up).		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
	Layout, measure, and rule an unlined masking sheet showing relevant guidelines (edge of sheet, gripper margins, plate clamp, center marks, etc.) for 8 1/2" x 11" single-color work.		
	Assemble and strip color flat for 8 1/2" x 11" using preruled masking sheet.		
Assembly tasks	Layout, measure, and rule an unlined masking sheet showing relevant guidelines (edge of sheet, gripper margins, plate clamp, center marks, etc.) for 8 1/2" x 11" single-color work.		
	Layout, measure, and rule an unlined masking sheet showing relevant guidelines (edge of sheet, gripper margins, plate clamp, center marks, etc.) for 11" x 17" single-color work.		
	Assemble and strip single-color flat for 11" x 17" using preruled masking sheet.		
	Layout, measure, and rule an unlined masking sheet showing relevant guidelines (edge of sheet, gripper margins, plate clamp, center marks, etc.) for 8 1/2" x 11" multicolor work using pin register system.		
	Strip a flat for single-color envelopes.		
	Strip a flat for single-color work and turn imposition.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
	Strip a flat for single-color work and tumble imposition.		
	Strip a single-color flat that includes screen tints.		
	Strip single-color flats for a 4 page signature.		
	Strip single-color flats for an 8 page signature.		
MULTICOLOR AND COMPLEMENTARY FLAT ASSEMBLY TECHNIQUES		**0**	**15**
Basic multicolor assembly	Strip a line and halftone combination flat.		
	Strip a multicolor job with color quality control bars for a 4 page signature.		
	Strip a single-color step and repeat flat (without pin register).		
	Strip single-color step and repeat using a pin register system.		
Complementary flats	Check registration of multiple flats using daylight proofing material.		
	Strip a multicolor job that uses masking film as a mechanical negative on one.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
CONTACTING TECHNIQUES		**1**	**15**
Basic contacting theory	Identify daylight contacting equipment.		
	Identify daylight contacting material.		
	Produce a composite negative using daylight material.		
Contacting tasks application	Conduct an exposure test on daylight materials.		
	Produce a spread negative/positive for image fit using a contact control wedge as a guide.		
	Produce a choke negative/positive for image film using a contact control wedge as a guide.		
	Produce a composite negative using daylight material.		
PIN REGISTER SYSTEMS		**1**	**15**
Pin register theory	Explain use and importance of pin register.		
Pin register use	Perform daily cleanup and scheduled preventive maintenance of the offset press according to manufacturers' specifications.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
	Layout, measure, and rule on unlined masking sheet showing relevant guidelines (edge of sheet, gripper margins, plate clamp, center marks, etc.) for 8 1/2" x 11" multicolor work using pin register system.		
	Strip single-color step and repeat using a pin register system.		
PLATEMAKING		**4**	**15**
Identification and theory	Identify safety considerations for platemaking.		
	Practice safe work habits in platemaking operations.		
	Identify basic parts of the platemaker and metal plates.		
	Identify basic parts of the photo-direct or electrostatic platemaker.		
	Identify plate materials and plate types.		
	Identify processing chemicals and methods.		
	Identify platemaking procedures for metal plates.		
	Identify platemaking procedures for photo-direct or electrostatic plates (masters).		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
Practical application	Determine exposure time for metal plates using transparent step scale and rub down test.		
	Prepare metal plates (expose, process, and store).		
	Make additions, deletions, and repairs to an offset plate.		
	Calibrate plate exposure unit for dot-for-dot reproduction.		
	Identify exposure devices and plate processors.		
	Identify and correct platemaking problems.		
	Perform multiple exposures on a plate using a pin register system.		
	Perform step and repeat images on plates using pins.		
	Identify and use quality control devices for platemaking.		
	Identify and use light integrator systems.		

SPECIFIC TECHNICAL

PGT 111 - Image Assembly/Platemaking

Resources

Printed References

Peck, H. L. (1989). *Stripping: The assembly of film images*. Pittsburgh: Graphic Arts Technical Foundation.

Blair, R. N., Destree, T. M., & Wentzel, F. (1987). *Graphic arts photography: Color* (2nd ed.). Pittsburgh: Graphic Arts Technical Foundation.

SPECIFIC TECHNICAL

PGT 112 - Halftone Reproduction Photography I

Course Overview

Course Description

Provides instruction in the theory, equipment, materials, and techniques used to produce halftones for printing. Emphasis will be placed on production of high quality reproducible images. Topics include: halftone theory and terminology, equipment and materials identification, safety and maintenance considerations, and basic halftone production.

Competency Areas

Halftone Theory and Terminology
Equipment and Material Identification
Safety and Maintenance Considerations
Basic Halftone Production

Prerequisites

PGT 109, PGT 110, PGT 111

Corequisite

PGT 113

Credit Hours

2

Contact Hours Per Week

Class - 1

P.Lab - 2

D.Lab - 2

SPECIFIC TECHNICAL

PGT 112 - Halftone Reproduction Photography I

Course Outline

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
HALFTONE THEORY AND TERMINOLOGY		**6**	**8**
Theory	Identify line and halftone copy.		
	Identify reflection and transmission copy, both color and black and white.		
	Identify basic special effects and procedures for mezzotint, posterization and others.		
	Identify basic halftone theory.		
	Identify densitometers (both reflective and transmission) and their uses.		
	Identify halftone screen type percentages.		
	Identify halftone shooting procedures.		
	Identify halftone developing procedures.		
Terminology	Run exposure tests for main, shadow, and bump exposures.		
	Compute halftone exposures.		
	Make halftone negative.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
	Evaluate halftone negative.		
EQUIPMENT AND MATERIAL IDENTIFICATION		**2**	**6**
Material handling	Prepare chemicals for processing film using correct temperature and mixing ratios.		
	Properly handle, mix, store, and dispose of all chemicals used in photography.		
Equipment	Demonstrate proper equipment use and operation.		
	Employ proper material use.		
SAFETY AND MAINTENANCE CONSIDERATIONS		**2**	**6**
Equipment care	Calibrate and maintain film processor using quality control devices.		
	Evaluate test strips/images using a densitometer.		
	Classify film types and their uses.		
Safety	Read and interpret Material Safety Data Sheet and labels.		
	Use and properly care for filters.		
BASIC HALFTONE PRODUCTION		**0**	**20**
Basic production techniques	Run exposure tests for main, shadow, and bump exposures.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
	Compute halftone exposures.		
	Make halftone negative.		
Production tasks	Evaluate halftone negative.		
	Make needed adjustments to halftone exposure and processing.		
	Make exposure test for diffusion transfer halftone print.		
	Make diffusion transfer halftone print.		

SPECIFIC TECHNICAL

PGT 112 - Halftone Reproduction Photography I

Resources

Printed References

Cogoli, J. E. (1988). *Graphics arts photography: Black and white* (2nd ed.). Pittsburgh: Graphic Arts Technical Foundation.

SPECIFIC TECHNICAL

PGT 113 - Halftone Reproduction Photography II

Course Overview

Course Description

Provides instruction in the techniques used to produce halftones for printing. Emphasis will be placed on production of high quality reproducible images. Topics include: halftone production, halftone evaluation and correction, and safety and maintenance considerations.

Competency Areas

Halftone Production
Halftone Evaluation and Correction
Safety and Maintenance Considerations

Prerequisite/Corequisite

PGT 112

Credit Hours

4

Contact Hours Per Week

Class - 1

P.Lab - 7

D.Lab - 2

SPECIFIC TECHNICAL

PGT 113 - Halftone Reproduction Photography II

Course Outline

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
HALFTONE PRODUCTION		**4**	**40**
Advanced halftone production	Identify duotone copy and basic production procedures.		
	Produce duotones.		
	Perform advanced calibration procedures.		
	Produce halftones from problem copy.		
	Explain the theory of process color.		
	Calculate exposure for enlargement and reduction using various methods.		
Halftone tasks	Demonstrate production techniques producing assigned tasks.		
HALFTONE EVALUATION AND CORRECTION		**4**	**40**
Production evaluation	Identify and correct problems encountered in reproduction photography processes.		
	Perform rescreening halftone methods.		
	Compute halftone exposures.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
	Make needed adjustments to halftone exposure and processing.		
Correction	Employ correction theory practicing on assigned projects.		
SAFETY AND MAINTENANCE CONSIDERATIONS		**2**	**10**
Safety	Use, carefully handle, and store screens.		
	Properly handle, mix, store, and dispose of all chemicals used in photography.		
	Read and interpret Material Safety Data Sheets and labels.		
Maintenance	Evaluate equipment maintenance needs.		
	Perform necessary maintenance on equipment.		

SPECIFIC TECHNICAL

PGT 113 - Halftone Reproduction Photography II

Resources

Printed References

Cogoli, J. E. (1988). *Graphics arts photography: Black and white* (2nd ed.). Pittsburgh: Graphic Arts Technical Foundation.

SPECIFIC TECHNICAL

PGT 114 - Basic Multicolor Assembly

Course Overview

Course Description

Provides instruction and skill development in the areas of equipment maintenance, tool handling, job planning, and flat color stripping techniques. Emphasizes developing standards and repeatable techniques for producing quality work. Topics include: terminology and safety, proofing and platemaking techniques, and multicolor flat and process color production.

Competency Areas

Terminology and Safety
Proofing and Platemaking Techniques
Multicolor Flat and Process Color Production

Corequisites

PGT 112, PGT 113

Credit Hours

5

Contact Hours Per Week

Class - 2

P.Lab - 6

D.Lab - 2

SPECIFIC TECHNICAL

PGT 114 - Basic Multicolor Assembly

Course Outline

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
TERMINOLOGY AND SAFETY		**5**	**5**
Terminology	Identify advanced stripping procedures and terminology.		
Safety	Identify safety considerations in stripping operations.		
	Properly handle, mix, store, and dispose of hazardous chemicals.		
	Record production time, materials consumption, and quantities on appropriate forms.		
	Read and interpret Material Safety Data Sheets and product labels.		
	Plan and organize work for optimum productivity.		
PROOFING AND PLATEMAKING TECHNIQUES		**10**	**30**
Proofing basics	Strip a multicolor job that uses masking film as a mechanical negative on one.		
	Identify and strip a multicolor job using registration marks and clear masking materials.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
Platemaking	Make additions, deletions, and repairs to an offset plate.		
	Identify and use light integrator systems.		
	Identify types of register control pin systems.		
	Identify plate types, characteristics, and applications.		
	Expose and develop plates for 4 - color process using quality control devices.		
	Expose and develop plates for halftones with separate window flats.		
	Perform plate preservation, file management, and storage.		
MULTICOLOR FLAT AND PROCESS COLOR PRODUCTION		**5**	**45**
Basic color production	Strip a multicolor job that uses masking film as a mechanical negative on one.		
	Identify and strip a multicolor job using registration marks and clear masking materials.		
Basic color task	Produce a variety of color stripping projects to completion.		

SPECIFIC TECHNICAL

PGT 114 - Basic Multicolor Assembly

Resources

Printed References

Blair, R. N., Destree, T. M., & Wentzel, F. (1987). *Graphic arts photography: Color* (2nd ed.). Pittsburgh: Graphic Arts Technical Foundation.

Peck, H. L. (1989). *Stripping: The assembly of film images.* Pittsburgh: Graphic Arts Technical Foundation.

SPECIFIC TECHNICAL

PGT 115 - Film Composition Production Techniques I

Course Overview

Course Description

Introduces advanced image assembly and composition techniques used in a production environment. Emphasizes quality control through applied techniques with a number of simulated production exercises. Topics include: terminology and safety, equipment and materials handling, exposure calibration, spreads and undercuts/traps, quality control devices, flat color techniques, basic process color, applied production methods, and film composition techniques.

Competency Areas

Terminology and Safety
Equipment and Materials Handling
Exposure Calibration
Spreads and Undercuts/Traps
Quality Control Devices
Flat Color Techniques
Basic Process Color
Applied Production Methods
Film Composition Techniques

Prerequisites

PGT 112, PGT 113, PGT 114

Credit Hours

4

Contact Hours Per Week

Class - 1

P.Lab - 7

D.Lab - 2

SPECIFIC TECHNICAL

PGT 115 - Film Composition Production Techniques I

Course Outline

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
TERMINOLOGY AND SAFETY		**1**	**4**
Terminology and uses	Identify daylight contacting equipment.		
	Identify daylight contacting material.		
	Conduct an exposure test on daylight materials.		
	Produce a spread negative/positive for image fit using a contact control wedge as a guide.		
	Produce a choke negative/positive for image film using a contact control wedge as a guide.		
	Produce a composite negative using daylight material.		
Safety	Properly handle, mix, store, and dispose of hazardous chemicals.		
	Record production time, materials consumption, and quantities on appropriate forms.		
	Read and interpret Material Safety Data Sheets and product labels.		
	Plan and organize work for optimum productivity.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
EQUIPMENT AND MATERIALS HANDLING		**2**	**6**
Equipment uses and training	Maintain vacuum pump, frame, light source, and exposure control unit.		
	Calculate dot-for-dot exposures.		
	Identify graphic/image modifiers.		
	Identify electronic image assembly devices.		
Materials/uses	Perform contacting material calibration/exposure test.		
	Identify daylight contacting equipment.		
	Identify daylight contacting material.		
	Conduct an exposure test on daylight materials.		
EXPOSURE CALIBRATION		**1**	**5**
Identify materials	Identify daylight contacting equipment.		
	Identify daylight contacting material.		
Exposure calibrations	Perform contacting material calibration/exposure test.		
	Calculate dot-for-dot exposures.		
	Use transmission densitometer for evaluating dot percentage.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
	Conduct an exposure test on daylight materials.		
SPREADS AND UNDERCUTS/ TRAPS		**2**	**20**
Theory and purpose of traps	Explain purposes of traps.		
Trap creation and production	Calculate dot-for-dot exposures.		
	Produce a spread negative/positive for image fit using a contact control wedge as a guide.		
	Produce a choke negative/positive for image film using a contact control wedge as a guide.		
	Perform image spread.		
	Perform image choke.		
	Perform image dupe.		
	Perform image reverse.		
QUALITY CONTROL DEVICES		**1**	**5**
Quality control device uses	Conduct an exposure test on daylight materials.		
	Use transmission densitometer for evaluating film density.		
	Use transmission densitometer for evaluating dot percentage.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
	Use transmission densitometer for evaluating quality control.		
	Identify and use reflection densitometer for evaluating color proofs.		
Application	Identify graphic/image modifiers.		
	Identify electronic image assembly devices.		
	Perform contacting material calibration/exposure test.		
	Maintain vacuum pump, frame, light source, and exposure control unit.		
	Calculate dot-for-dot exposures.		
FLAT COLOR TECHNIQUES		**1**	**10**
Flat color theory	Perform daily cleanup and scheduled preventive maintenance of the offset press according to manufacturers' specifications.		
Flat color tasks	Calculate dot-for-dot exposures.		
	Maintain vacuum pump, frame, light source, and exposure control unit.		
	Perform image spread.		
	Perform image choke.		
	Perform image dupe.		
	Perform image reverse.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
Production/safety	Record production time, materials consumption and quantities on appropriate forms. Read and interpret Material Safety Data Sheets and product labels.		
BASIC PROCESS COLOR		**1**	**10**
Basic four/color process	Explain the theory of four color process.		
Color principles	Apply basic four color theory in producing four color process projects.		
APPLIED PRODUCTION METHODS		**0**	**15**
Techniques	Stripping, using quality control devices for process color work. Produce a spread negative/positive for image fit using a contact control wedge as a guide. Produce a choke negative/positive for image film using a contact control wedge as a guide.		
Production tasks	Perform four color stripping. Record production time, materials consumption, and quantities on appropriate forms. Strip a multicolor job with color quality control bars for a 4 page signature.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
	Create drop shadows. Perform flat labeling techniques.		
	Perform stripping, using quality control devices for process color work.		
FILM COMPOSITION TECHNIQUES		**1**	**15**
Theory and terminology	Perform contacting material calibration/exposure test.		
	Stripping for multiple plate exposure.		
Composition application tasks	Stripping with clear base carriers.		
	Use stripping templates and grids.		
	Create stripping templates and grids.		
	Identify and strip a multicolor job using registration marks and clear masking materials.		
	Read and interpret Material Safety Data Sheets and product labels.		

SPECIFIC TECHNICAL

PGT 115 - Film Composition Production Techniques I

Resources

Printed References

Blair, R. N., Destree, T. M., & Wentzel, F. (1987). *Graphic arts photography: Color* (2nd ed.). Pittsburgh: Graphic Arts Technical Foundation.

Blair, R. N., & Destree, T. M. (1988). *The lithographer's manual* (8th ed.). Pittsburgh: Graphic Arts Technical Foundation.

Peck, H. L. (1989). *Stripping: The assembly of film images*. Pittsburgh: Graphic Arts Technical Foundation.

SPECIFIC TECHNICAL

PGT 116 - Film Composition Production Techniques II

Course Overview

Course Description

Provides instruction in advanced image assembly and composition techniques used in a production environment. Quality control devices, flat color, and contacting methods are covered in depth. Emphasizes quality control through applied techniques with a number of simulated production exercises. Topics include: quality control devices, flat color techniques, basic process color, and applied production methods.

Competency Areas

Quality Control Devices
Flat Color Techniques
Basic Process Color
Applied Production Methods

Prerequisite/Corequisite

PGT 115

Credit Hours

4

Contact Hours Per Week

Class - 1

P.Lab - 7

D.Lab - 2

SPECIFIC TECHNICAL

PGT 116 - Film Composition Production Techniques II

Course Outline

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
QUALITY CONTROL DEVICES		**6**	**15**
Quality control device uses	Conduct an exposure test on daylight materials.		
	Use transmission densitometer for evaluating film density.		
	Use transmission densitometer for evaluating dot percentage.		
	Use transmission densitometer for evaluating quality control.		
	Identify and use reflection densitometer for evaluating color proofs.		
Application	Identify graphic/image modifiers.		
	Identify electronic image assembly devices.		
	Perform contacting material calibration/exposure test.		
	Maintain vacuum pump, frame, light source, and exposure control unit.		
	Calculate dot-for-dot exposures.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
FLAT COLOR TECHNIQUES		**2**	**25**
Flat color theory	Perform daily cleanup and scheduled preventive maintenance of the offset press according to manufacturers' specifications.		
Flat color tasks	Calculate dot-for-dot exposures.		
	Maintain vacuum pump, frame, light source, and exposure control unit.		
	Perform image spread.		
	Perform image choke.		
	Perform image dupe.		
	Perform image reverse.		
Production/safety	Record production time, materials consumption, and quantities on appropriate forms.		
	Read and interpret Material Safety Data Sheets and product labels.		
BASIC PROCESS COLOR		**2**	**25**
Basic four/color process	Explain the theory of four color process.		
Color principles	Apply basic four color theory in producing four color process projects.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
APPLIED PRODUCTION METHODS		**0**	**25**
Techniques	Perform stripping, using quality control devices for process color work.		
	Produce a spread negative/positive for image fit using a contact control wedge as a guide.		
	Produce a choke negative/positive for image film using a contact control wedge as a guide.		
Production tasks	Perform four color stripping.		
	Record production time, materials consumption, and quantities on appropriate forms.		
	Strip a multicolor job with color quality control bars for a 4 page signature.		
	Create drop shadows.		
	Perform flat labeling techniques.		
	Perform stripping, using quality control devices for process color work.		

SPECIFIC TECHNICAL

PGT 116 - Film Composition Production Techniques II

Resources

Printed References

Blair, R. N., Destree, T. M., & Wentzel, F. (1987). *Graphic arts photography: Color* (2nd ed.). Pittsburgh: Graphic Arts Technical Foundation.

Blair, R. N., & Destree, T. M. (1988). *The lithographer's manual* (8th ed.). Pittsburgh: Graphic Arts Technical Foundation.

Peck, H. L. (1989). *Stripping: The assembly of film images.* Pittsburgh: Graphic Arts Technical Foundation.

Document Number:
04-16-01

SPECIFIC TECHNICAL

PGT 117 - Process Color Assembly Techniques

Course Overview

Course Description

In this course current production methods are presented and practiced. Skill development is enhanced with the heavy use of simulated production exercises. Topics include: four-color process stripping, large format imposition, and press assembly.

Competency Areas

Four-Color Process Stripping
Large Format Imposition
Press Assembly

Prerequisites

PGT 115, PGT 116

Credit Hours

4

Contact Hours Per Week

Class - 1

P.Lab - 7

D.Lab - 2

SPECIFIC TECHNICAL

PGT 117 - Process Color Assembly Techniques

Course Outline

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
FOUR-COLOR PROCESS STRIPPING		**4**	**30**
Process color techniques	Strip a multicolor job that uses masking film as a mechanical negative on one.		
	Identify and strip a multicolor job using registration marks and clear masking materials.		
	Perform four-color stripping.		
	Record production time, materials consumption, and quantities on appropriate forms.		
Production tasks	Perform production techniques on a variety of assigned tasks.		
LARGE FORMAT IMPOSITION		**3**	**30**
Theory of imposition	Illustrate the process for large format pagination.		
Practical applications	Apply theory to produce variety of pagination assignments.		
PRESS ASSEMBLY		**3**	**30**
Applied techniques	Plan and organize work for optimum productivity.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
	Strip a multicolor job with color quality control bars for a 4 page signature.		
	Produce a 16 page signature dummy with proper imposition, pagination, and directions.		
Production techniques	Apply techniques of press assembly to industry standards.		

SPECIFIC TECHNICAL

PGT 117 - Process Color Assembly Techniques

Resources

Printed References

Blair, R. N., & Destree, T. M. (1988). *The lithographer's manual* (8th ed.). Pittsburgh: Graphic Arts Technical Foundation.

Field, G. G. (1988). *Color and its production* (1st ed.). Pittsburgh: Graphics Arts Technical Foundation.

Peck, H. L. (1989). *Stripping: The assembly of film images*. Pittsburgh: Graphic Arts Technical Foundation.

SPECIFIC TECHNICAL

PGT 118 - Process Color Production Techniques

Course Overview

Course Description

Provides for the presentation and application of current production methods. Skills are developed through the use of simulated production exercises. Topics include: dry dot etching, color proofing and evaluation, correction techniques, and complex page assembly.

Competency Areas

Dry Dot Etching
Color Proofing and Evaluation
Correction Techniques
Complex Page Assembly

Prerequisite/Corequisite

PGT 117

Credit Hours

4

Contact Hours Per Week

Class - 1

P.Lab - 7

D.Lab - 2

SPECIFIC TECHNICAL

PGT 118 - Process Color Production Techniques

Course Outline

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
DRY DOT ETCHING		**2**	**20**
Basic techniques and theory	Calculate dot-for-dot exposures.		
	Maintain vacuum pump, frame, light source, and exposure control unit.		
	Perform contacting material calibration/exposure test.		
Production	Perform dry dot etching.		
Quality control	Use transmission densitometer for evaluating film density.		
	Use transmission densitometer for evaluating dot percentage.		
	Use transmission densitometer for evaluating quality control.		
	Identify and use reflection densitometer for evaluating color proofs.		
COLOR PROOFING AND EVALUATION		**3**	**25**
Principles and theory	Calculate dot-for-dot exposures.		
	Maintain vacuum pump, frame, light source, and exposure control unit.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
	Perform contacting material calibration/exposure test.		
	Identify different methods of color proofing.		
Production/quality control	Identify and use reflection densitometer for evaluating color proofs.		
	Perform color proofing.		
	Proof color work with color proofing materials.		
CORRECTION TECHNIQUES		**3**	**20**
Process color techniques	Check registration of multiple flats using daylight proofing material.		
	Strip a multicolor job that uses masking film as a mechanical negative on one.		
	Identify daylight contacting equipment.		
	Identify daylight contacting material.		
	Conduct an exposure test on daylight materials.		
	Produce a spread negative/positive for image fit using a contact control wedge as a guide.		
	Produce a choke negative/positive for image film using a contact control wedge as a guide.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
	Produce a composite negative using daylight material.		
Process color production	Perform four-color stripping.		
	Record production time, materials consumption, and quantities on appropriate forms.		
	Perform stripping, using quality control devices for process color work.		
COMPLEX PAGE ASSEMBLY		**2**	**25**
Pagination techniques	Identify and use stripping requirements for bindery.		
	Identify and use stripping requirements for press.		
Signature assembly	Produce a 16 page signature dummy with proper imposition, pagination, and directions.		
	Check registration of multiple flats using daylight proofing material.		
	Strip a multicolor job with color quality control bars for a 4 page signature.		

SPECIFIC TECHNICAL

PGT 118 - Process Color Production Techniques

Resources

Printed References

Blair, R. N., & Destree, T. M. (1988). *The lithographer's manual* (8th ed.). Pittsburgh: Graphic Arts Technical Foundation.

Field, G. G. (1988). *Color and its production* (1st ed.). Pittsburgh: Graphics Arts Technical Foundation.

Peck, H. L. (1989). *Stripping: The assembly of film images.* Pittsburgh: Graphic Arts Technical Foundation.

SPECIFIC TECHNICAL

PGT 119 - Prepress Technology Practicum/Internship

Course Overview

Course Description

Provides an approved industry setting or structured in-school program for skill development and enhancement. Emphasis is placed on building applied production skills in one or more of the prepress areas. This course is structured to provide a smooth entry into the printing industry after course completion. Topics include: image assembly, platemaking, film composition, color stripping, and proofing.

Competency Areas

Image Assembly
Platemaking
Film Composition
Color Stripping
Proofing

Prerequisites

PGT 115, Program admission

Credit Hours

9

Contact Hours Per Week

Class - 1

O.B.I. - 24

SPECIFIC TECHNICAL

PGT 119 - Prepress Technology Practicum/Internship

Course Outline

Recommended Outline	After completing this section, the student will:	Hours Class	Hours OBI
IMAGE ASSEMBLY		**2**	**50**
Basics	Read and comprehend production information from job ticket/jacket.		
	Identify safety considerations in stripping operations.		
	Practice safe work habits in stripping operations.		
	Identify hand tools in stripping.		
	Identify materials in stripping.		
	Identify production equipment in stripping.		
	Set up stripping area for production.		
Applied techniques	Establish "true edge" and "vertical alignment" on a stripping table (square up).		
	Lay out, measure, and rule an unlined masking sheet showing relevant guidelines (edge of sheet, gripper margins, plate clamp, center marks, etc.) for 8 1/2" x 11" single-color work.		

Recommended Outline	After completing this section, the student will:	Hours Class OBI
	Assemble and strip color flat for 8 1/2" x 11" using preruled masking sheet.	
	Lay out, measure, and rule an unlined masking sheet showing relevant guidelines (edge of sheet, gripper margins, plate clamp, center marks, etc.) for 8 1/2" x 11" single-color work.	
	Layout, measure, and rule an unlined masking sheet showing relevant guidelines (edge of sheet, gripper margins, plate clamp, center marks, etc.) for 11" x 17" single-color work.	
	Assemble and strip single-color flat for 11" x 17" using preruled masking sheet.	
	Layout, measure, and rule an unlined masking sheet showing relevant guidelines (edge of sheet, gripper margins, plate clamp, center marks, etc.) for 8 1/2" x 11" multicolor work using pin register system.	
	Strip a flat for single-color envelopes.	
	Strip a flat for single-color work and turn imposition.	
	Strip a flat for single-color work and tumble imposition.	
	Strip a single-color flat that includes screen tints.	

Recommended Outline	After completing this section, the student will:	Hours Class	Hours OBI
	Strip single-color flat for a 4 page signature.		
	Strip single-color flat for an 8 page signature.		
	Strip a line and halftone combination flat.		
PLATEMAKING		**2**	**50**
Basics	Identify platemaking procedures for photo-direct or electrostatic plates (masters).		
	Determine exposure time for metal plates using transparent step scale and rub down test.		
	Prepare metal plates (expose, process, and store).		
	Make additions, deletions, and repairs to an offset plate.		
	Print a multicolor job with color bars.		
	Calibrate plate exposure unit for dot-for-dot reproduction.		
	Identify exposure devices and plate processors.		
	Identify and correct platemaking problems.		
Applied techniques	Perform multiple exposures on a plate using a pin register system.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours OBI
	Perform step and repeat images on plates using pins.		
	Identify and use quality control devices for platemaking.		
	Identify and use light integrator systems.		
	Produce blue line proofs.		
	Produce color proofs.		
FILM COMPOSITION		**2**	**60**
Basics	Perform daily cleanup and scheduled preventive maintenance of the offset press according to manufacturers' specifications.		
	Calculate dot-for-dot exposures.		
	Maintain vacuum pump, frame, light source, and exposure control unit.		
	Perform contacting material calibration/exposure test.		
	Perform image dupe.		
	Perform image spread.		
	Perform image choke.		
Applied techniques	Perform compositing - black and white.		
	Produce a composite negative using daylight material.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours OBI
COLOR STRIPPING		**2**	**60**
Basics	Perform stripping with clear base carriers.		
	Use stripping templates and grids.		
	Create stripping templates and grids.		
Applied techniques	Perform four-color stripping.		
	Perform compositing - black and white.		
	Perform dry dot etching.		
	Properly handle, mix, store, and dispose of hazardous chemicals.		
	Record production time, materials consumption, and quantities on appropriate forms.		
	Read and interpret Material Safety Data Sheets and product labels.		
PROOFING		**2**	**20**
Basics	Produce blue line proofs.		
	Produce color proofs.		
	Identify types of register control pin systems.		
	Identify different methods of color proofing.		

Recommended Outline	After completing this section, the student will:	Hours Class OBI
Applied techniques	Properly handle, mix, store, and dispose of hazardous chemicals. Identify and use reflection densitometer for evaluating color proofs.	

SPECIFIC TECHNICAL

PGT 119 - Prepress Technology Practicum/Internship

Resources

Printed References

Blair, R. N., & Destree, T. M. (1988). *The lithographer's manual* (8th ed.). Pittsburgh: Graphic Arts Technical Foundation.

Cogoli, J. E. (1988). *Graphics arts photography* (2nd ed.). Pittsburgh: Graphic Arts Technical Foundation.

DeJidas, L. P., & Destree, T. M. (1988). *Sheetfeed offset press operating* (1st ed). Pittsburgh: Graphic Arts Technical Foundation.

Field, G. G. (1988). *Color and its production* (1st ed.). Pittsburgh: Graphics Arts Technical Foundation.

Peck, H. L. (1989). *Stripping: The assembly of film images*. Pittsburgh: Graphic Arts Technical Foundation.

SPECIFIC TECHNICAL

PGT 120 - Duplicator Operations I

Course Overview

Course Description

Introduces the basic equipment systems and materials for duplicator press operations. Emphasis is placed on platemaking and make ready procedures. Topics include: duplicator platemaking, fundamental paper technology, ink technology, safety, and make ready.

Competency Areas

Duplicator Platemaking
Fundamental Paper Technology for Duplicator Operations
Ink Technology for Duplicator Operations
Make Ready
Safety

Prerequisite

PGT 101

Credit Hours

4

Contact Hours Per Week

P.Lab - 4

D.Lab - 3

Class - 2

SPECIFIC TECHNICAL

PGT 120 - Duplicator Operations I

Course Outline

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
DUPLICATOR PLATEMAKING		**4**	**16**
Platemaker safety	Identify safety considerations for platemaking.		
	Practice safe work habits in platemaking operations.		
Basic components	Identify basic parts of the platemaker.		
	Identify basic parts of the photo-direct or electrostatic platemaker.		
Materials, processes, and maintenance	Identify plate materials and plate types.		
	Identify processing chemicals and methods.		
	Identify platemaking procedures for metal plates.		
	Maintain platemaking equipment.		
Electrostatic/photo-direct masters	Identify platemaking procedures for photo-direct or electrostatic plates (masters).		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
FUNDAMENTAL PAPER TECHNOLOGY FOR DUPLICATOR OPERATIONS		**6**	**15**
Basic size/basic weight	Identify basic paper types and sizes.		
Grain direction and printing side	Determine grain directions of paper.		
	Handle and jog paper stock (wire/felt, watermarks, carbonless sequence).		
Paper weight, caliper, and finishes	Identify paper weight, coating, and sizes.		
	Identify paper problems, curling, etc.		
INK TECHNOLOGY FOR DUPLICATOR OPERATIONS		**2**	**14**
Ink types and uses	Identify offset ink types and uses.		
Ink additives and problems	Identify ink additives.		
Pantone matching system	Identify ink problems.		
	Set up, mix, and test ink for printing using ink color chart for mixing requirements.		
MAKE READY		**3**	**20**
Press systems	Make ready paper systems.		
	Make ready inking systems.		
Paper path	Make ready paper systems in paper path.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
	Make ready dampening systems in paper path.		
Printing process	Make ready dampening systems for printing process.		
	Make ready paper systems for printing process.		
SAFETY		**5**	**5**
Platemaker safety	Identify safety considerations for platemaking.		
	Practice safe work habits in platemaking operations.		
Duplicator safety	Identify safety considerations for duplicator operations.		
	Practice safe work habits on duplicator operations.		
Chemical safety and MSDS	Read and interpret Material Safety Data Sheets and product labels.		

SPECIFIC TECHNICAL

PGT 120 - Duplicator Operations I

Resources

Printed References

Cogoli. (1986). *Photo offset fundamentals.* Mission Hills, CA: Glenco.

Graphic Arts Technical Foundation. (1987). *Solving sheetfed offset press problems.* Pittsburgh: Author.

La Paloma Publishing Co. (1986). *Understanding the multi 1250.* Beaverton, OR: Author.

AM Multigraphics. (1980). *Operator's manual 1250N multilith offset.* Mt. Prospect, IL: Author.

A.B. Dick Company. *Operating instructions models 350/360 offset equipment.* Chicago, IL: Author.

Audio Visuals

A. B. Dick Company. (1988). *A. B. Dick 9840 operating instructions* (video casette). Chicago, IL: Author.

A. B. Dick Company. (1988). *A. B. Dick color head operational instructions* (video cassette). Chicago, IL: Author.

A. B. Dick Company. (1988). *A. B. Dick roller maintenance* (video casette). Chicago, IL: Author.

A. B. Dick Company. (1988). *A. B. Dick 2+2 RS* (video casette). Chicago, IL: Author.

SPECIFIC TECHNICAL

PGT 121 - Duplicator Operations II

Course Overview

Course Description

Provides instruction in techniques for duplicator press utilization. Emphasis is placed on machine control and problem solving activities. Topics include: single-color printing operations, fountain chemistry pH, cleaning and maintenance, safety, planning and scheduling, and recordkeeping.

Competency Areas

Single-Color Printing Operations
Fountain Chemistry pH
Cleaning and Maintenance
Safety
Planning and Scheduling
Recordkeeping

Prerequisite

PGT 101

Prerequisite/Corequisite

PGT 120

Credit Hours

3

Contact Hours Per Week

Class - 1

P.Lab - 3

D.Lab - 2

SPECIFIC TECHNICAL

PGT 121 - Duplicator Operations II

Course Outline

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
SINGLE-COLOR PRINTING OPERATIONS		**2**	**42**
Metal plate	Print single-color job using a metal plate.		
Photo-direct/electrostatic masters	Print single-color job using photo-direct and/or electrostatic masters.		
Single-color two sides	Print a single-color job, two sided on a duplicator press.		
	Print a single-color job work and tumble on a duplicator press.		
	Print a single-color job work and turn on a duplicator press.		
Various sizes and substrates	Print a single-color job on carbonless stock on a duplicator press.		
	Print a single-color job on envelopes.		
	Print a single-color job on heavy stock.		
Vacuum feeder	Print single-color job using photo-direct and/or electrostatic masters to operate vacuum feeder.		
	Print single-color job using a metal plate to operate vacuum feeder.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
Register board	Print single-color job using photo-direct and/or electrostatic masters using register board.		
	Print single-color job using a metal plate using register board.		
Image position	Print single-color job using photo-direct and/or electrostatic masters considering image position.		
	Print single-color job using a metal plate considering image position.		
Delivery	Print single-color job using photo-direct and/or electrostatic masters considering delivery.		
	Print single-color job using a metal plate considering delivery.		
Imposition	Print a single-color job work and tumble on a duplicator press.		
	Print a single-color job work and turn on a duplicator press.		
FOUNTAIN CHEMISTRY pH		1	1
Terminology	Identify fountain solutions and additives.		
	Identify fountain testing materials, equipment, and procedures.		
Fountain ratios and pH	Mix fountain solutions using appropriate ratios.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
	Mix fountain solution to the proper pH/conductivity.		
CLEANING AND MAINTENANCE		**1**	**4**
Down time	Perform major cleanup and roller treatment.		
	Clean and secure duplicator for down time.		
	Perform scheduled cleanup and preventive maintenance of the offset press according to manufacturer's specifications.		
SAFETY		**1**	**0**
Terminology	Identify safety considerations for platemaking.		
	Identify safety considerations for duplicator operations.		
	Read and interpret Material Safety Data Sheets and product labels.		
Safe work habits	Practice safe work habits in platemaking operations.		
	Practice safe work habits on duplicator operations.		
PLANNING AND SCHEDULING		**3**	**2**
Terminology	Use terminology needed for completing planning and scheduling.		

Recommended Outline	After completing this section, the student will:	Hours Class	Lab
Job jacket/ticket interpretation	Read and comprehend production information from job ticket/jacket.		
	Read and interpret production information from job ticket/jacket.		
	Mark set up sheets for subsequent operations.		
Schedule production	Plan and organize work for optimum productivity.		
RECORDKEEPING		**2**	**1**
Inventory control	Record production time, materials consumption, and quantities on appropriate forms.		

SPECIFIC TECHNICAL

PGT 121 - Duplicator Operations II

Resources

Printed References

Cogoli. (1986). *Photo offset fundamentals.* Mission Hills, CA: Glenco.

Graphic Arts Technical Foundation. (1987). *Solving sheetfed offset press problems.* Pittsburgh: Author.

La Paloma Publishing Co. (1986). *Understanding the multi 1250.* Beaverton, OR: Author.

AM Multigraphics. (1980). *Operator's manual 1250N multilith offset.* Mt. Prospect, IL: Author.

A.B. Dick Company. *Operating instructions models 350/360 offset equipment.* Chicago, IL: Author.

Audio Visuals

A. B. Dick Company. (1988). *A. B. Dick 9840 operating instructions* (video casette). Chicago, IL: Author.

A. B. Dick Company. (1988). *A. B. Dick color head operational instructions* (video cassette). Chicago, IL: Author.

A. B. Dick Company. (1988). *A. B. Dick roller maintenance* (video casette). Chicago, IL: Author.

A. B. Dick Company. (1988). *A. B. Dick 2+2 RS* (video casette). Chicago, IL: Author.

SPECIFIC TECHNICAL

PGT 122 - Advanced Duplicator Operations I

Course Overview

Course Description

Introduces the equipment and materials for advanced duplicator press operations. Topics include: specialty inks, duplicator attachments for specialty printing, various controls and aids for register printing, and safety.

Competency Areas

Specialty Inks
Duplicator Attachments for Specialty Printing
Controls and Aids for Register Printing
Safety for Advanced Duplicator

Prerequisites

PGT 120, PGT 121

Credit Hours

3

Contact Hours Per Week

Class - 2

D. Lab - 3

SPECIFIC TECHNICAL

PGT 122 - Advanced Duplicator Operations I

Course Outline

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
SPECIALTY INKS		**4**	**4**
Ink types and uses	Identify offset ink types and uses.		
	Identify ink additives.		
	Identify ink problems.		
Pantone matching systems	Set up, mix, and test ink for printing using ink color chart for mixing requirements.		
	Select and mix inks to PMS specifications.		
DUPLICATOR ATTACHMENTS FOR SPECIALTY PRINTING		**0**	**8**
T-51 set up	Print a multicolor job on a duplicator using an additional color head.		
Spray powder	Adjust and use spray powder on press.		
CONTROLS AND AIDS FOR REGISTER PRINTING		**8**	**8**
Register controls	Print a multicolor job using register marks.		
	Print a multicolor job with color bars.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
	Print close register color work.		
	Check registration while printing.		
	Explain the relationship of packing to the register of multiple colors.		
	Select proper side guide for subsequent operations.		
SAFETY FOR ADVANCED DUPLICATOR		**8**	**10**
Safe work habits	Practice safe work habits on duplicator operations.		
	Identify and practice safety procedures for press operation.		
Terminology	Read and interpret Material Safety Data Sheets and product labels.		

SPECIFIC TECHNICAL

PGT 122 - Advanced Duplicator Operations I

Resources

Printed References

Cogoli. (1986). *Photo offset fundamentals.* Mission Hills, CA: Glenco.

Graphic Arts Technical Foundation. (1987). *Solving sheetfed offset press problems.* Pittsburgh: Author.

La Paloma Publishing Co. (1986). *Understanding the multi 1250.* Beaverton, OR: Author.

AM Multigraphics. (1980). *Operator's manual 1250N multilith offset.* Mt. Prospect, IL: Author.

A. B. Dick Company. *Operating instructions models 350/360 offset equipment.* Chicago, IL: Author.

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A. B. Dick Company. (1988). *A. B. Dick color head operational instructions* (video cassette). Chicago, IL: Author.

A. B. Dick Company. (1988). *A. B. Dick roller maintenance* (video casette). Chicago, IL: Author.

A. B. Dick Company. (1988). *A. B. Dick 2+2 RS* (video casette). Chicago, IL: Author.

SPECIFIC TECHNICAL

PGT 123 - Advanced Duplicator Operations II

Course Overview

Course Description

Provides instruction for equipment and techniques used in advanced duplicator press operations. Emphasis is placed on machine control and problem solving activities. Topics include: advanced printing on various substrates, multicolor printing and quality control techniques, cleaning and maintenance for multicolor, planning and scheduling, process printing, and safety.

Competency Areas

Advanced Printing on Various Substrates
Multicolor Printing and Quality Control Techniques
Cleaning and Maintenance for Multicolor
Planning and Scheduling
Process Printing
Safety for Advanced Duplicating

Prerequisites

PGT 120, PGT 121

Prerequisite/Corequisite

PGT 122

Credit Hours

4

Contact Hours Per Week

Class - 1

P.Lab - 9

SPECIFIC TECHNICAL

PGT 123 - Advanced Duplicator Operations II

Course Outline

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
ADVANCED PRINTING ON VARIOUS SUBSTRATES		**1**	**40**
Various sizes and substrates	Print envelopes of different sizes and styles.		
	Print a single color job, one side.		
	Print a multicolor job, one side.		
	Print a multicolor job, two sides.		
	Run card and cover stock.		
Terminology	Identify grain direction of various papers and explain importance to printing.		
MULTICOLOR PRINTING AND QUALITY CONTROL TECHNIQUES		**1**	**10**
Corrections related to process	Identify and correct problems related to ink and water balance on the offset press.		
	Check roller pressure of the inking and dampening system and make necessary adjustments according to manufacturer's specifications.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
CLEANING AND MAINTENANCE FOR MULTICOLOR		**2**	**20**
Major maintenance	Perform major cleanup and roller treatment.		
Operation maintenance	Make needed pressure settings on a duplicator.		
	Check and adjust gripper bite on duplicator.		
PLANNING AND SCHEDULING		**1**	**5**
Terminology	Read and comprehend production information from job ticket/jacket.		
Job jacket/ticket interpretation	Record production time, materials consumption, and quantities on appropriate forms.		
	Plan and organize work for optimum productivity.		
PROCESS PRINTING		**2**	**5**
Advanced single-color methods	Print a single-color job, two sides on a duplicator using advanced methods.		
	Print carbonless paper on a duplicator using advanced methods.		
	Print a job work and turn on a duplicator using advanced methods.		
	Print a job work and tumble on a duplicator using advanced methods.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
SAFETY FOR ADVANCED DUPLICATING		**3**	**10**
Safe work habits	Practice safe work habits on duplicator operations.		
	Identify and practice safety procedures for press operation.		
Terminology	Read and interpret Material Safety Data Sheets and product labels.		

SPECIFIC TECHNICAL

PGT 123 - Advanced Duplicator Operations II

Resources

Printed References

Cogoli. (1986). *Photo offset fundamentals.* Mission Hills, CA: Glenco.

Graphic Arts Technical Foundation. (1987). *Solving sheetfed offset press problems.* Pittsburgh: Author.

La Paloma Publishing Co. (1986). *Understanding the multi 1250.* Beaverton, OR: Author.

AM Multigraphics. (1980). *Operator's manual 1250N multilith offset.* Mt. Prospect, IL: Author.

A.B. Dick Company. *Operating instructions models 350/360 offset equipment.* Chicago, IL: Author.

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A. B. Dick Company. (1988). *A. B. Dick color head operational instructions* (video cassette). Chicago, IL: Author.

A. B. Dick Company. (1988). *A. B. Dick roller maintenance* (video casette). Chicago, IL: Author.

A. B. Dick Company. (1988). *A. B. Dick 2+2 RS* (video casette). Chicago, IL: Author.

SPECIFIC TECHNICAL

PGT 124 - Large Single-Color Sheet Press Operations I

Course Overview

Course Description

Introduces the preparation materials necessary for large single-color press operations. Topics include: plate making consideration for large press printing, paper technology, ink technology, fountain chemistry and pH for large press, and safety in large press operations.

Competency Areas

Plate Making for Large Press Printing
Paper Technology for Large Press Operations
Ink Technology for Large Press Operations
Fountain Chemistry and pH for Large Press
Safety

Prerequisite

PGT 121

Credit Hours

3

Contact Hours Per Week

Class - 2

P.Lab - 1

D.Lab - 2

SPECIFIC TECHNICAL

PGT 124 - Large Single-Color Sheet Press Operations I

Course Outline

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
PLATE MAKING FOR LARGE PRESS PRINTING		**10**	**26**
Platemaker safety	Identify safety considerations for platemaking.		
	Practice safe work habits in platemaking operations.		
Basic components	Identify basic parts of the platemaker.		
	Identify basic parts of the photo-direct or electrostatic platemaker.		
Plates and masters	Identify plate materials and plate types.		
	Identify platemaking procedures for metal plates.		
Metal plate chemistry	Identify processing chemicals and methods.		
	Prepare metal plates (expose, process, and store).		
Quality control guides	Determine exposure time for metal plates using transparent step scale and rub down test.		
Metal plate repairs	Make additions, deletions, and repairs to offset plate.		

Recommended Outline	After completing this section, the student will:	Hours Class	Lab
Surprint/combination plates	Make a plate using screen tints.		
Multiple image exposure	Make a step/repeat using cutout or butterflies.		
	Make a step/repeat using pin register system.		
	Prepare a plate for multiples exposure on one side.		
Plates for multicolor printing	Make plates for multicolor work.		
PAPER TECHNOLOGY FOR LARGE PRESS OPERATIONS		**6**	**1**
Basic size/basic weight	Identify basic paper types and sizes.		
Grain direction and printing side	Determine grain directions of paper.		
	Handle and jog paper stock (wire/felt, watermarks, carbonless sequence).		
Large sheet problems	Handle and jog paper stock (wire/felt, watermarks, carbonless sequence).		
	Identify paper problems, curling, etc.		
Paper weight, caliper. and finishes	Identify paper weight, coating, and sizes.		
	Identify paper problems, curling, etc.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
Guide edges	Identify and mark guide edges of printed sheets for subsequent operations.		
INK TECHNOLOGY FOR LARGE PRESS OPERATIONS		**2**	**2**
Ink types and uses	Identify offset ink types and uses.		
Ink additives and problems	Identify ink additives.		
	Identify ink problems.		
Pantone matching system	Set up, mix, and test ink for printing using ink color chart for mixing requirements.		
	Select and mix inks to PMS specifications.		
FOUNTAIN CHEMISTRY AND pH FOR LARGE PRESS		**1**	**1**
Fountain solution chemistry	Mix fountain solution to the proper pH/conductivity.		
SAFETY		**1**	**0**
Press safety	Practice safe work habits on large single-color sheet press.		
Materials safety	Read and follow Material Safety Data Sheets and product labels.		

SPECIFIC TECHNICAL

PGT 124 - Large Single-Color Sheet Press Operations I

Resources

Printed References

Cogoli. (1986). *Photo offset fundamentals.* Mission Hills, CA: Glenco.

Graphic Arts Technical Foundation. (1987). *Solving sheetfed offset press problems.* Pittsburgh: Author.

La Paloma Publishing Co. (1986). *Understanding the multi 1250.* Beaverton, OR: Author.

AM Multigraphics. (1980). *Operator's manual 1250N multilith offset.* Mt. Prospect, IL: Author.

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A. B. Dick Company. (1988). *A. B. Dick roller maintenance* (video casette). Chicago, IL: Author.

A. B. Dick Company. (1988). *A. B. Dick 2+2 RS* (video casette). Chicago, IL: Author.

SPECIFIC TECHNICAL

PGT 125 - Large Single-Color Sheet Press Operations II

Course Overview

Course Description

Introduces and provides instruction in the equipment, preparation, and set up procedures for large single-color press operations. Emphasis is placed on preparation and planning activities associated with large press operations. Topics include: planning and scheduling, single-color printing, positioning and registration, make ready and set up, press adjustments, cleaning and maintenance, safety in press operations, and quality control.

Competency Areas

Planning and Scheduling
Single-Color Printing
Positioning and Registration
Make Ready and Set Up
Press Adjustments
Cleaning and Maintenance
Safety in Press Operations
Quality Control

Prerequisites

PGT 122, PGT 123

Prerequisite/Corequisite

PGT 124

Credit Hours

6

Contact Hours Per Week

Class - 3

P.Lab - 1

D.Lab - 6

SPECIFIC TECHNICAL

PGT 125 - Large Single-Color Sheet Press Operations II

Course Outline

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
SAFETY IN PRESS OPERATIONS		**1**	**0**
Press safety	Identify safety considerations for platemaking.		
	Practice safe work habits in platemaking operations.		
	Identify safety considerations for duplicator operations.		
	Practice safe work habits on duplicator operations.		
Chemical safety	Read and interpret Material Safety Data Sheets and product labels.		
PLANNING AND SCHEDULING		**10**	**5**
Terminology	Read and comprehend production information from job ticket/jacket.		
Job tickets/work orders	Read and comprehend production information from job ticket/jacket.		
	Record production time, materials consumption, and quantities on job ticket/jacket.		
Production schedule	Plan and organize work for optimum productivity.		

Recommended Outline	After completing this section, the student will:	Hours Class	Lab
	Plan and organize production schedule for optimum productivity.		
	Record production time, materials consumption, and quantities on appropriate forms to facilitate production schedule.		
MAKE READY AND SET UP		**5**	**10**
Press measuring devices	Use a micrometer to determine correct packing of blanket and plate cylinders.		
	Make needed impression cylinder pressure adjustments.		
	Install a blanket on the blanket cylinder.		
Press systems/packing and bearer height	Use a micrometer to determine correct packing of blanket and plate cylinders.		
	Make needed impression cylinder pressure adjustments.		
	Install a blanket on the blanket cylinder.		
Press make ready adjustments	Check and adjust grippers.		
	Adjust air and vacuum.		
	Adjust and use spray powder on press.		
	Mark set up sheets for subsequent operations.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
PRESS ADJUSTMENTS		**3**	**10**
Image quality considerations	Evaluate print quality and make needed adjustments to improve printed piece.		
	Print heavy solid work making needed adjustments to improve quality.		
	Set up the offset press and print to production standards.		
Press troubleshooting	Diagnose and correct problems related to blanket and impression cylinder.		
	Print heavy solid work making needed adjustments to improve quality.		
	Diagnose and correct problems related to blanket and impression cylinder.		
Feeder adjustments	Adjust air and vacuum.		
	Check double sheet detector.		
Delivery adjustments	Adjust and use spray powder on press.		
SINGLE-COLOR PRINTING		**3**	**25**
Printing impositions	Print a single-color job, two sides on a large press.		
	Print a job work and turn on a large press.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
	Print a job work and tumble on a large press.		
Carbonless paper	Print carbonless paper on a large press.		
POSITIONING AND REGISTRATION		**3**	**5**
Image quality considerations	Identify and correct registration problems on the offset press.		
Press make ready adjustments	Perform make ready on an offset press to industry production standards.		
	Identify and correct registration problems on the offset press.		
Quality control devices	Identify and correct registration problems on the offset press using quality control devices.		
Image position	Match image position to original copy or proof.		
	Identify and mark guide edges of printed sheets for subsequent operations.		
	Check registration while printing.		
CLEANING AND MAINTENANCE		**1**	**5**
Daily cleanup	Perform cleanup of inking system.		
	Perform cleanup of dampening system.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
	Perform cleanup of cylinders.		
Preventive maintenance	Perform preventive maintenance.		
QUALITY CONTROL		**4**	**10**
Job jackets/work orders	Read with comprehension the production information on a job jacket for completeness and accuracy.		
	Set up the offset press and print to production standards using job jackets/work orders.		
Print quality considerations	Set up the offset press and print to production standards employing print quality considerations.		
	Evaluate GATF quality control printing standards.		
Quality control devices	Use GATF quality control printing.		
	Check registration while printing.		
Aids in registration	Identify aids in registration.		
	Check registration while printing.		

SPECIFIC TECHNICAL

PGT 125 - Large Single-Color Sheet Press Operations II

Resources

Printed References

Cogoli. (1986). *Photo offset fundamentals.* Mission Hills, CA: Glenco.

Graphic Arts Technical Foundation. (1987). *Solving sheetfed offset press problems.* Pittsburgh: Author.

La Paloma Publishing Co. (1986). *Understanding the multi 1250.* Beaverton, OR: Author.

AM Multigraphics. (1980). *Operator's manual 1250N multilith offset.* Mt. Prospect, IL: Author.

A.B. Dick Company. *Operating instructions models 350/360 offset equipment.* Chicago, IL: Author.

Audio Visuals

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A. B. Dick Company. (1988). *A. B. Dick color head operational instructions* (video cassette). Chicago, IL: Author.

A. B. Dick Company. (1988). *A. B. Dick roller maintenance* (video casette). Chicago, IL: Author.

A. B. Dick Company. (1988). *A. B. Dick 2+2 RS* (video casette). Chicago, IL: Author.

SPECIFIC TECHNICAL

PGT 126 - Large Single-Color Sheet Press Operations III

Course Overview

Course Description

Provides instruction in make ready, printing, and maintenance operations of the large single-color press. Emphasis is placed on machine control and problem solving activities. Topics include: large press make ready, spot color printing, production techniques, cleaning and maintenance, solids and screens, and safety.

Competency Areas

Large Press Make Ready
Spot Color Printing
Production Techniques
Cleaning and Maintenance
Solids and Screens
Safety

Prerequisites

PGT 124, PGT 125

Credit Hours

5

Contact Hours Per Week

Class - 1

D.Lab - 9

SPECIFIC TECHNICAL

PGT 126 - Large Single-Color Sheet Press Operations III

Course Outline

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
LARGE PRESS MAKE READY		**2**	**30**
Press measuring devices	Use a micrometer to determine correct packing of blanket and plate cylinders.		
	Make needed impression cylinder pressure adjustments.		
	Install a blanket on the blanket cylinder.		
Press setting adjustments	Check and adjust grippers.		
	Adjust air and vacuum.		
	Adjust and use spray powder on press.		
Production planning	Mark set up sheets for subsequent operations.		
SPOT COLOR PRINTING		**1**	**10**
Flat color	Print a multicolor job with color bars.		
	Print close register color work.		
	Print a single color job, two sides on a large press.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
SOLIDS AND SCREENS		**2**	**20**
Image uniformity	Print heavy solid work making needed adjustments to improve quality.		
PRODUCTION TECHNIQUES		**2**	**10**
Quality control/production standards	Evaluate print quality and make needed adjustments to improve printed piece.		
	Print heavy solid work making needed adjustments to improve quality.		
	Plan and organize work for optimum productivity.		
	Set up the offset press and print to production standards.		
Troubleshooting/ adjustments	Diagnose and correct problems related to blanket and impression cylinder.		
	Adjust air and vacuum.		
CLEANING AND MAINTENANCE		**1**	**10**
Down time	Perform daily cleanup and scheduled preventive maintenance of the offset press according to manufacturers' specification.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
SAFETY		**2**	**10**
Safe work habits	Identify safety considerations for platemaking.		
	Practice safe work habits in platemaking operations.		
	Identify and practice safety procedures for press operation.		
	Properly handle, mix, store, and dispose of hazardous chemicals.		
Terminology	Read and interpret Material Safety Data Sheets and product labels.		

SPECIFIC TECHNICAL

PGT 126 - Large Single-Color Sheet Press Operations III

Resources

Printed References

Cogoli. (1986). *Photo offset fundamentals.* Mission Hills, CA: Glenco.

Graphic Arts Technical Foundation. (1987). *Solving sheetfed offset press problems.* Pittsburgh: Author.

La Paloma Publishing Co. (1986). *Understanding the multi 1250.* Beaverton, OR: Author.

AM Multigraphics. (1980). *Operator's manual 1250N multilith offset.* Mt. Prospect, IL: Author.

A.B. Dick Company. *Operating instructions models 350/360 offset equipment.* Chicago, IL: Author.

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A. B. Dick Company. (1988). *A. B. Dick color head operational instructions* (video cassette). Chicago, IL: Author.

A. B. Dick Company. (1988). *A. B. Dick roller maintenance* (video casette). Chicago, IL: Author.

A. B. Dick Company. (1988). *A. B. Dick 2+2 RS* (video casette). Chicago, IL: Author.

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SPECIFIC TECHNICAL

PGT 127 - Large Single-Color Sheet Press Operations IV

Course Overview

Course Description

Provides instruction in make ready, printing, and maintenance operations of the large single-color press. Emphasis is placed on machine control and production activities. Topics include: large press make ready, process color printing, cleaning and maintenance, troubleshooting, solids and screens, and safety.

Competency Areas

Large Press Make Ready
Troubleshooting
Process Color Printing
Cleaning and Maintenance
Solids and Screens
Safety

Prerequisites

PGT 124, PGT 125

Credit Hours

5

Contact Hours Per Week

Class - 1

D.Lab - 9

SPECIFIC TECHNICAL

PGT 127 - Large Single-Color Sheet Press Operations IV

Course Outline

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
LARGE PRESS MAKE READY		**2**	**20**
Make ready systems	Make ready paper systems.		
	Make ready inking systems.		
	Make ready dampening systems.		
TROUBLESHOOTING		**1**	**10**
Cleanup	Perform scheduled cleanup and preventive maintenance of the offset press according to manufacturer's specifications.		
Ink/water balance	Identify and correct problems related to ink and water balance on the offset press.		
Registration	Identify and correct registration problems on the offset press.		
Plate	Perform plate image corrections on press.		
General troubleshooting	Identify and troubleshoot printing problems related to ink, press, paper, static, etc.		

Recommended Outline	After completing this section, the student will:	Hours Class	Hours Lab
PROCESS COLOR PRINTING		**2**	**20**
Production printing	Print a multicolor job, two sides.		
	Evaluate GATF quality control printing standards and devices.		
	Explain the relationship of packing to the register of multiple colors.		
CLEANING AND MAINTENANCE		**1**	**10**
Down time	Perform daily cleanup and scheduled preventive maintenance of the offset press according to manufacturers' specification.		
SOLIDS AND SCREENS		**2**	**20**
Image uniformity	Print heavy solid work making needed adjustments to improve quality.		
SAFETY		**2**	**10**
Safe work habits	Identify safety considerations for platemaking.		
	Practice safe work habits in platemaking operations.		
	Identify and practice safety procedures for press operation.		
	Properly handle, mix, store, and dispose of hazardous chemicals.		
Terminology	Read and interpret Material Safety Data Sheets and product labels.		

SPECIFIC TECHNICAL

PGT 127 - Large Single-Color Sheet Press Operations IV

Resources

Printed References

Cogoli. (1986). *Photo offset fundamentals.* Mission Hills, CA: Glenco.

Graphic Arts Technical Foundation. (1987). *Solving sheetfed offset press problems.* Pittsburgh: Author.

La Paloma Publishing Co. (1986). *Understanding the multi 1250.* Beaverton, OR: Author.

M Multigraphics. (1980). *Operator's manual 1250N multilith offset.* Mt. Prospect, IL: Author.

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A. B. Dick Company. (1988). *A. B. Dick roller maintenance* (video casette). Chicago, IL: Author.

A. B. Dick Company. (1988). *A. B. Dick 2+2 RS* (video casette). Chicago, IL: Author.

SPECIFIC TECHNICAL

PGT 128 - Press Operations Practicum/Internship I

Course Overview

Course Description

Provides an approved industry setting or industry simulated setting where skills as a press operator can be developed. Emphasizes assimilation of industry standards of performance and quality. Topics include one or more of the following: duplicator operations, advanced duplicator operations, and large sheet press operations.

Competency Areas

Duplicator Operations
Advanced Duplicator Operations
Large Sheet Press Operations

Prerequisites

PGT 120, Program admission

Credit Hours

6

Contact Hours Per Week

Class - 0

O.B.I. - 20

SPECIFIC TECHNICAL

PGT 128 - Press Operations Practicum/Internship I

Course Outline

Recommended Outline	After completing this section, the student will:	Hours Class	Hours OBI
DUPLICATOR OPERATIONS		**0**	**50**
Metal plate	Print single-color job using a metal plate.		
	Print a single-color job, two sided on a duplicator press.		
	Print a single-color job on carbonless stock on a duplicator press.		
	Print a single-color job on envelopes.		
	Print a single-color job on heavy stock.		
	Print a single-color job work and tumble on a duplicator press.		
	Print a single-color job work and turn on a duplicator press.		
Photo-direct/electrostatic masters	Print single-color job using photo-direct and/or electrostatic masters.		
Vacuum feeder	Print single-color job using a metal plate.		
	Print a single-color job using photo-direct and/or electrostatic masters.		
	Print a single-color job, two sided on a duplicator press.		

Recommended Outline	After completing this section, the student will:	Hours Class OBI
	Print a single-color job on carbonless stock on a duplicator press.	
	Print a single-color job on envelopes.	
	Print a single-color job on heavy stock.	
	Print a single-color job work and tumble on a duplicator press.	
	Print a single-color job work and turn on a duplicator press.	
Image position	Print a single-color job using a metal plate.	
	Print a single-color job, two sided on a duplicator press.	
	Print a single-color job on carbonless stock on a duplicator press.	
	Print a single-color job on envelopes.	
	Print a single-color job on heavy stock.	
	Print a single-color job, two sided on a duplicator press.	
	Print a single-color job work and tumble on a duplicator press.	
	Print a single-color job work and turn on a duplicator press.	
Two sided printing	Print a single-color job, two sided on a duplicator press.	

Recommended Outline	After completing this section, the student will:	Hours Class OBI
Imposition	Print a single-color job, two sided on a duplicator press.	
	Print a single-color job on carbonless stock on a duplicator press.	
	Print a single-color job on envelopes.	
	Print a single-color job on heavy stock.	
	Print a single-color job work and tumble on a duplicator press.	
	Print a single-color job work and turn on a duplicator press.	
Various substrates	Print a single-color job using a metal plate.	
	Print a single-color job using photo-direct and/or electrostatic masters.	
	Print a single-color job, two sided on a duplicator press.	
	Print a single-color job on carbonless stock on a duplicator press.	
	Print a single-color job on envelopes.	
	Print a single-color job on heavy stock.	
	Print a single-color job work and tumble on a duplicator press.	
	Print a single-color job work and turn on a duplicator press.	

Recommended Outline	After completing this section, the student will:	Hours Class	Hours OBI
ADVANCED DUPLICATOR OPERATIONS		**0**	**50**
Various sizes and substrates	Identify and correct problems related to ink and water balance on the offset press.		
	Check roller pressure of the inking and dampening system and make necessary adjustments according to manufacturer's specifications.		
	Print envelopes of different sizes and styles.		
	Print a single-color job, one side.		
	Print a single-color job, two sides on a large press.		
	Print a multicolor job, one side.		
	Print a multicolor job, two sides.		
	Print carbonless paper on a large press.		
	Identify grain direction of various papers and explain importance to printing.		
	Run card and cover stock.		
LARGE SHEET PRESS OPERATIONS		**0**	**100**
Image quality consideration	Print a single-color job, two sides on a large press.		
	Print carbonless paper on a large press.		

Recommended Outline	After completing this section, the student will:	Hours Class OBI
	Print a job work and turn on a large press.	
	Print a job work and tumble on a large press.	
	Print a multicolor job, two sides.	
	Evaluate GATF quality control printing standards and devices.	
	Explain the relationship of packing to the register of multiple colors.	
Press troubleshooting	Evaluate GATF quality control printing standards and devices.	
	Explain the relationship of packing to the register of multiple colors.	
Feeder adjustment	Print a single-color job, two sides on a large press.	
	Print carbonless paper on a large press.	
	Print a job work and turn on a large press.	
	Print a job work and tumble on a large press.	
	Print a multicolor job, two sides.	
	Evaluate GATF quality control printing standards and devices.	
	Explain the relationship of packing to the register of multiple colors.	

SPECIFIC TECHNICAL

PGT 128 - Press Operations Practicum/Internship I

Resources

Printed References

Cogoli. (1986). *Photo offset fundamentals.* Mission Hills, CA: Glenco.

Graphic Arts Technical Foundation. (1987). *Solving sheetfed offset press problems.* Pittsburgh: Author.

La Paloma Publishing Co. (1986). *Understanding the multi 1250.* Beaverton, OR: Author.

AM Multigraphics. (1980). *Operator's manual 1250N multilith offset.* Mt. Prospect, IL: Author.

A.B. Dick Company. *Operating instructions models 350/360 offset equipment.* Chicago, IL: Author.

Audio Visuals

A. B. Dick Company. (1988). *A. B. Dick 9840 operating instructions* (video casette). Chicago, IL: Author.

A. B. Dick Company. (1988). *A. B. Dick color head operational instructions* (video cassette). Chicago, IL: Author.

A. B. Dick Company. (1988). *A. B. Dick roller maintenance* (video casette). Chicago, IL: Author.

A. B. Dick Company. (1988). *A. B. Dick 2+2 RS* (video casette). Chicago, IL: Author.

SPECIFIC TECHNICAL

PGT 129 - Press Operations Internship II

Course Overview

Course Description

Provides an approved industry setting where the students develop and sharpen skills as a press operator. Emphasis is placed on production standards achievement and quality control. Topics include one or more of the following: duplicator operations, advanced duplicator operations, and large sheet press operations.

Competency Areas

Duplicator Operations
Advanced Duplicator Operations
Large Sheet Press Operations

Prerequisites

PGT 121, Program admission

Credit Hours

6

Contact Hours Per Week

O.B.I. - 20

Class - 0

SPECIFIC TECHNICAL

PGT 129 - Press Operations Internship II

Course Outline

Recommended Outline	After completing this section, the student will:	Hours Class	Hours OBI
DUPLICATOR OPERATIONS		**0**	**50**
Metal plate	Print single-color job using a metal plate.		
	Print a single-color job, two sided on a duplicator press.		
	Print a single-color job on carbonless stock on a duplicator press.		
	Print a single-color job on envelopes.		
	Print a single-color job on heavy stock.		
	Print a single-color job work and tumble on a duplicator press.		
	Print a single-color job work and turn on a duplicator press.		
Photo-direct/electrostatic masters	Print single-color job using photo-direct and/or electrostatic masters.		
Vacuum feeder	Print single-color job using a metal plate.		
	Print a single-color job using photo-direct and/or electrostatic masters.		
	Print a single-color job, two sided on a duplicator press.		

Recommended Outline	After completing this section, the student will:	Hours Class OBI
	Print a single-color job on carbonless stock on a duplicator press.	
	Print a single-color job on envelopes.	
	Print a single-color job on heavy stock.	
	Print a single-color job work and tumble on a duplicator press.	
	Print a single-color job work and turn on a duplicator press.	
Image position	Print a single-color job using a metal plate.	
	Print a single-color job, two sided on a duplicator press.	
	Print a single-color job on carbonless stock on a duplicator press.	
	Print a single-color job on envelopes.	
	Print a single-color job on heavy stock.	
	Print a single-color job, two sided on a duplicator press.	
	Print a single-color job work and tumble on a duplicator press.	
	Print a single-color job work and turn on a duplicator press.	
Two sided printing	Print a single-color job, two sided on a duplicator press.	

Recommended Outline	After completing this section, the student will:	Hours Class OBI
Imposition	Print a single-color job, two sided on a duplicator press.	
	Print a single-color job on carbonless stock on a duplicator press.	
	Print a single-color job on envelopes.	
	Print a single-color job on heavy stock.	
	Print a single-color job work and tumble on a duplicator press.	
	Print a single-color job work and turn on a duplicator press.	
	Print single-color job using a metal plate.	
	Print a single-color job using photo-direct and/or electrostatic masters.	
Various substrates	Print a single-color job, two sided on a duplicator press.	
	Print a single-color job on carbonless stock on a duplicator press.	
	Print a single-color job on envelopes.	
	Print a single-color job on heavy stock.	
	Print a single-color job work and tumble on a duplicator press.	
	Print a single-color job work and turn on a duplicator press.	

Recommended Outline	After completing this section, the student will:	Hours Class	Hours OBI
ADVANCED DUPLICATOR OPERATIONS		**0**	**50**
Various sizes and substrates	Identify and correct problems related to ink and water balance on the offset press.		
	Check roller pressure of the inking and dampening system and make necessary adjustments according to manufacturer's specifications.		
	Print envelopes of different sizes and styles.		
	Print a single color job, one side.		
	Print a single color job, two sides on a large press.		
	Print a multicolor job, one side.		
	Print a multicolor job, two sides.		
	Print carbonless paper on a large press.		
	Identify grain direction of various papers and explain importance to printing.		
	Run card and cover stock.		
LARGE SHEET PRESS OPERATIONS		**0**	**100**
Image quality consideration	Print a single color job, two sides on a large press.		
	Print carbonless paper on a large press.		

Recommended Outline	After completing this section, the student will:	Hours Class OBI
	Print a job work and turn on a large press.	
	Print a job work and tumble on a large press.	
	Print a multicolor job, two sides.	
	Evaluate GATF quality control printing standards and devices.	
	Explain the relationship of packing to the register of multiple colors.	
Press troubleshooting	Evaluate GATF quality control printing standards and devices.	
Feeder adjustment	Explain the relationship of packing to the register of multiple colors.	
	Print a single-color job, two sides on a large press.	
	Print carbonless paper on a large press.	
	Print a job work and turn on a large press.	
	Print a job work and tumble on a large press.	
	Print a multicolor job, two sides.	
	Evaluate GATF quality control printing standards and devices.	
	Explain the relationship of packing to the register of multiple colors.	

SPECIFIC TECHNICAL

PGT 129 - Press Operations Internship II

Resources

Printed References

Cogoli. (1986). *Photo offset fundamentals.* Mission Hills, CA: Glenco.

Graphic Arts Technical Foundation. (1987). *Solving sheetfed offset press problems.* Pittsburgh: Author.

La Paloma Publishing Co. (1986). *Understanding the multi 1250.* Beaverton, OR: Author.

AM Multigraphics. (1980). *Operator's manual 1250N multilith offset.* Mt. Prospect, IL: Author.

A.B. Dick Company. *Operating instructions models 350/360 offset equipment.* Chicago, IL: Author.

Audio Visuals

A. B. Dick Company. (1988). *A. B. Dick 9840 operating instructions* (video casette). Chicago, IL: Author.

A. B. Dick Company. (1988). *A. B. Dick color head operational instructions* (video casette). Chicago, IL: Author.

APPENDIX A

EQUIPMENT LIST

APPENDIX A

PRINTING/GRAPHICS TECHNOLOGY

EQUIPMENT LIST

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10 Power Glass
30 - 60 Angle, Triangle, metal preferred
45 Angle, Triangle, metal preferred
Accessory shoe
Acetate
Adapter rings, step up/down
Aerosol can of compressed air
Airbrush
Antistatic cloth
Attachment, right angle
Automated Letterpress
Automatic Film Processor
Background roller system
Barn doors
Basket processors
Baum Folders
Bellows
Board, register
Boom
Brush, antistatic
Brush, sable
Bulk film loader
Burnisher (Flat)
Burnishing Roller
Cable, release
Camera back (instant film)
Camera, panoramic
Camera strap
Camera, view (4 x 5)
Camera, 35mm SLR
Camera, viewfinder
Camera, twin-lens reflex (2 1/4 x 2 1/4)
Camera, passport
Camera stand
Camera, instant film

Camera, 35mm ranger finder
Camera back (8 x 10, 4 x 5)
Camera, 35mm SLR (2 1/4 x 2 3/4)
Camera view (11 x 14)
Camera case
Camera, view (8 x 10)
Camera, view (5 x 7)
Camera, baseboard view
Changing bag
Chemical, bleach fix (blix)
Chemical, wetting agent (quickwet)
Chemical, stop bath
Chemical, reducer
Chemical, hypo eliminator
Chemical, toner
Chemical, developer (color)
Chemical, hypo clearing agent
Chemical, developer (black and white)
Chemical, fixer-hypo
Chemical, stabilizer
Chemical, activator (for Ektaflex printer)
Chemical, intensifier
Circle and Ellipse Templates
Clamp, C
Clamp, angle
Clamp, G
Cleveland Folders
Collator - Stitcher - Trimmer
Color processor drum
Color analyzer
Color Wheel
Color Pencils
Color cover sheet
Colorbars/Slur Guide
Computer - Aided Design Software
Computer systems
Contact printer
Contact printing frame
Contact Vacuum Frame & Light Source
Copy stand
Copy to Plate Platemaker
Copy Holder

Cropping L's
Cut-film holders
D-rings
Dark cloth
Data Conversion System
Date Stamp
Degree Wheel (Pre - Angle)
Densitometer
Developing Trays
Developing Sink
Diffusion screen
Digital Scanner Jogger
Digitized Typesetting System
Dodger
Double Head Stitcher
Drafting Arm Light
Drawing Curves
Drawing Board
Drill Punch
Durometer
Easel, adjustable
Easel, multiple
Easel, speed
Easel, roll
Easel, borderless
Ektaflex printmaker
Electric Jack
Electronic Publishing Software
Enlarger
Enlarger, diffusion
Enlarger, with color head
Enlarger, black and white
Enlarger, condenser
Etching knife
Etching needle
Extension poles. (for lights and flash)
Extension tubes
Film stripper
Film Dryer (Automatic)
Film Processor
Film storage envelopes (negative bags)
Film color (panchromatic)

Film, ultraviolet
Film, infrared
Film, color reversal
Film, color negative
Film, x-ray
Film washer
Film clips
Film, black and white
Film, sheet
Film dyer
Film, positive
Film, orthochromatic
Film shield
Film, roll
Film, blue-sensitive (tungsten)
Film cassette opener
Film, high contrast (kodalith)
Film, negative
Filter, decamired
Filter, cross star
Filter, correction
Filter, ultraviolet
Filter, color printing
Filter, fog
Filter, lens (orange)
Filter, lens (red)
Filter, color correction
Filter, skylight
Filter, neutral density
Filter, color conversion
Filter, split image
Filter, safelight
Filter, diffusion
Filter, gelatin
Filter, lens (blue)
Filter, graduated
Filter, light balancing
Filter, black and white contrast
Filter, infrared
Filter, lens (yellow-green)
Filter, lens (yellow)
Filter, lens (green)

Filters, polycontrast
Filters, polarizing (for lens)
Flash, ring
Flash, synchronization
Flash, electronic
Focusing screen
Focusing aid (focusing magnifier)
Front screen projector
Gadget bag
Gang Stitcher
Gatefold
Gloves, white cotton
Gloves, waterproof
Glue and Fold Folders
Graduate
Graduated Cylinder
Grain, magnifier
Gray card
Gridwork (for light)
Handjack
Hanger, developing
Head screen
Holder, sheet film
Horizontal Process Camera
Hose
Hot water temperature control regulator
Illustration Board
Laboratory balance
Laminator
Laser Printer
Lens, fisheye
Lens, fresnal
Lens blockout frame
Lens cap
Lens, perspective control
Lens, support
Lens hood
Lens, high-speed
Lens, monocular
Lens, normal
Lens, wide-angle
Lens, telephoto

Lens, catadioptric (mirror)
Lens, close-up
Lens, long focus
Lens, tele-converter
Lens, soft-focus
Lens, macro
Lens, process
Lens, zoom
Lens, night
Level, spirit
Light Source
Light Integration Unit
Light, keg
Light, tungsten
Light, main
Light, strobe (studio)
Light, quartz
Light, hair
Light, parabolic reflector
Light, bounce
Light, fill
Light, kicker
Light, flood
Light, cold cathode
Light, background
Light, spot
Light, variable beam
Light, strobe (portable)
Litmus Strips
Loupe
Magnifier
Magnifying glass or Parameg
Masking Film
Mat cutter
Matt box for camera
MBO Folders
Meter, incident light
Meter, reflected light
Meter, spot
Meter, enlarging
Meter, electronic flash
Meter, color temperature

Microcomputer
Micrometer
Modem
Monopod
Motor drive for camera
Mounting press
Negative carrier
Negative file
Nitrogen hose
Non - repro Pens
Offset Duplicator
Opaque Brush
Packing Gauge
Padding Press
Palette, artist's
Paper, medium weight
Paper, color reversal
Paper, polyester base
Paper, matte
Paper, double weight
Paper, lustre
Paper, enlarging
Paper, color release
Paper, polycontrast
Paper, glossy
Paper, single weight
Paper safe
Paper, normal contrast
Paper, color negative
Paper, rc base
Paper, textured
Paper, high contrast
Paper, contact
Paper, fiber base
Paper, low contrast
Paper cutter
PH Tester
Photo Contact Screen 85 - 150
Photographic blotters
Phototypesetting System
Pica Conversion Ruler
Plastic Binding Machine

Plastic bottles
Plate Sink
Plate Punch
Plate Scale
Platemaker
PMS Book
PMT Processor
Posing stools
Power pack, battery
Power pack, AC
Press, Large single color sheet feed
Print washer
Print dryer
Print roller
Process Camera
Proce: Color Scanner (4 color sep.)
Processor, color paper
Processor, Rapid Access or Lith
Proportion Scale
Props
Razor Blades
Rear screen projection system
Reel, developing
Reel loader
Reflector, black screen
Reflector, umbrella
Reflector board, bounce reflector
Register Pins
Release, electronic
Repro Paper
Rescreen Lens
Retouching machine
Reversal ring
Round Cornering Machine
Ruler (Pica/Inches)
Ruler
Safelight
Scales for Mixing Ink
Screen Tints
Screen Angle Indicator
Scribers
Sensitivity Guides

Shrink Wrapping Machine
Silver recovery unit
Single Head Stitcher
Slave unit, built-in
Slave unit, adapter
Slide protector
Slide copier
Snoot
Soft shutter release
Spray Fixative
Spray Adhesive
Spray gun (retouching)
Squeegee, roller
Squeegee, print
Squeegee, film
Stirring rods, paddles
Stouffer Scale
Straight Edges
Stringing Machine
Stripping Table
Sun shade for camera
Swivel Knife
Synchronizer cable (PC cord)
T - square
Table, light
Table - Top Collator
Table - Top Cutter
Tacking iron
Tank, developing (sheet film)
Tank, developing (roll film)
Technical Drawing Pens
Thermometer
Thermometer (Darkroom)
Thinner
Thinner Dispenser
Three - Knife Back Trimmer
Timer, interval
Timer, enlarger
Timer
Tissue Paper
Tongs, stop bath and fixer
Tongs, developer

Tray, developing
Tray, temperature control
Tray siphon
Tray, washing
Tripods
Truck with Roller (Paper Transport)
Turntable
Type Gauge
Typewriter
Vernier
Vertical Process Camera
Viewfinder, waist level
Viewfinder, eye level
Viewfinder, magnifying
Viewing Booth
Vignette
Voltage regulator
Wafer Scaling
Water recirculator
Water temperature regulator
X - Acto Knife
Xerox Machine
Zone rendering guide
Zone master card